

THE RELEVANCE OF ARMOR IN COUNTERINSURGENCY OPERATIONS

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Military History

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

THE RELEVANCE OF ARMOR IN COUNTERINSURGENCY OPERATIONS, by
Major Douglas F. Baker, 111 pages.

Since the end of the Second World War most modern armies have been conventionally structured and equipped to fight high intensity conflicts against like armed nations. Congruently, there has also been many low intensity conflicts in which similarly equipped nations found themselves engaged. In response to these low intensity conflicts, nations employed the forces available to them, which were generally armor and mechanized in nature. The result of these conflicts have made the relevance of heavy armor, specifically the tank on the asymmetric battlefield a point of contention for the last half century. The question this poses is: How were conventionally equipped, tank heavy forces employed in COIN operations and were they successful? To determine this, examples of French operations in Indo China, the United States' involvement in Vietnam, Somalia, and Iraq, Canadian Afghan operations, and Russia's combat in Chechnya and Afghanistan will be analyzed. The focus for each case study will discuss the situation and threat, tactics used by the counterinsurgency force, modifications to vehicles or doctrine, and the ultimate determination of either success or failure of the tank in the conflict. The results of this study are that the combined arms team provides the commander with a lethal and capable force. The initiative is gained by commanders who seek the non-conventional employment of armor despite the situation or terrain. Task organized units or units that train with different branches enjoy greater success with less friction than units task organized under fire. Lastly, units possessing a more deployable package have a greater initial effect on the battlefield.

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ACRONYMS

| | |
|--------|--|
| AAR | After Action Review |
| ACAV | Armored Cavalry Assault Vehicle |
| ACR | Armored Cavalry Regiment |
| ADA | Air Defense Artillery |
| APC | Armored Personnel Carrier |
| ARVN | Army of the Republic of Vietnam |
| BMP | Boyevaya Mashina Pekhot (Armored Fighting Vehicle) |
| BTR | Bronetransportyor (Armored Transporter) |
| COIN | Counterinsurgency |
| GM | Groupement Mobile |
| HMMWV | High Mobility Multi Wheeled Vehicle |
| IED | Improvised Explosive Device |
| KIA | Killed in Action |
| LAW | Light Antitank Weapon |
| MRB | Motorized Rifle Brigade |
| MRD | Motorized Rifle Division |
| MRR | Motorized Rifle Regiment |
| MTOE | Modified Table of Organization and Equipment |
| NVA | North Vietnamese Army |
| QRF | Quick Reaction Force |
| RPG | Rocket Propelled Grenade |
| UNOSOM | United Nations Operations in Somalia |
| VC | Viet Cong |

CHAPTER 1

INTRODUCTION

To wish to hold the cavalry in reserve for the end of the battle, is to have no idea of the power of combined cavalry and infantry charges either for the attack or for defense.¹

—Napoleon Bonaparte, *Napoleon's Military Maxims*

Since the end of the Second World War most modern armies have been structured along conventional lines and equipped to fight high intensity conflicts against similarly armed nations. Examples of this trend can be found in the Arab Israeli Wars of 1956, 1967 and 1973, Operation Desert Storm in 1991, and the 2003 Coalition invasion of Iraq. All of these conflicts serve to demonstrate large mechanized forces engaged in conventional maneuver warfare against a similar equipped force. In all respects this epitomized the Cold War era where the tank was viewed as the dominate land capability, and systems ranging from personnel carriers to self-propelled artillery pieces were designed to support tank maneuver. During this same time period however, there have also been numerous low intensity conflicts in which conventionally equipped nations found themselves committed. In response to these low intensity conflicts, nations employed the forces they had available, which were generally armored and mechanized in nature. The mechanized forces that participated in these conflicts did so in a wide variety of ways with equally varying results. National powers have attempted to fight against these irregular conflicts in a multitude of manners. Some nations have tried to defeat the insurgent threat without mechanized units. These nations relied solely on light forces, either due to internal or external concerns over perceptions of deploying tanks, or due to the beliefs that the operational environment would not support armored maneuver.

Other nations have committed mechanized units against an unconventional foe while attempting to fight under the constraints of conventional doctrine. In other examples, armor has been used with a degree of latitude and in adaptive, imaginative methods to seek out non-standard ways to maximize the capabilities of the tank in the unconventional fight. The result of these conflicts has made the relevance of heavy armor, specifically the tank on the asymmetric battlefield, a point of contention for conventional militaries for the last half century. The question this poses is: How were these conventionally equipped, tank heavy forces employed in COIN operations and why were they successful or unsuccessful?

For the purpose of this analysis, two terms must be initially defined in order to provide clarity for the entire study. The term “success” will be defined in the tactical sense, which is that of a unit or formation accomplishing its assigned mission with the assigned forces while sustaining acceptable casualty levels. This mission may be in either the lethal or nonlethal sense of the word. The second term is Counter Insurgency Operations or COIN, which will be broadly defined as a type of operation undertaken by a superior, conventional force against an insurgent threat where the focus of operations is protection of the population by both military and civilian means. This asymmetric threat, in an attempt to avoid direct confrontation with a superior force, leverages irregular capabilities, guerrilla actions, as well conventional opposition to achieve its ends.

Although not an all encompassing study of COIN operations in the latter half of the 20th century, for this analysis will focus on the primary criteria of nations that were conventionally trained and equipped with armored vehicles that were engaged in an asymmetric conflict against an insurgent threat. Specific examples are the French COIN

operations in Indo China; the United States (U.S.) involvement in Vietnam, Somalia, and Iraq; Canadian operations in Afghanistan; and the Russian Federation's combat in Chechnya and Afghanistan. Each case study will discuss the situation and threat faced, the tactics used by the COIN force, modifications to either vehicles or doctrine to better respond to the threat, and the ultimate determination of either success or failure of the tank in the conflict.

Through analysis of the above listed case studies, the question of the relevance of heavy armor, specifically the tank, as a viable weapons platform in COIN operations will be addressed. Analysis is focused to identify successful tactics, adaptations, and organization, combined with a review of the cause of failure or shortfalls of those armor vehicles. The results of this discussion provide recommendations on task organization for tank and heavy mechanized forces. The analysis also provides suggested adjustments for making the current armored force more responsive for use in future asymmetric conflicts as based on historical evidence. The findings support the use of the tank in COIN operations as part of a combined arms team with the model of the Vietnam era ACR being the ideal organization to accomplish this task.

¹Napoleon Bonaparte, *Napoleon's Military Maxims*, ed. William E. Cairnes, trans. George C. D'Aguilar (Mineola, NY: Dover Publishing, 9 November 2004), part 1, number 89.

CHAPTER 2

VIETNAM

Analysis of the Vietnam War is essential to gain understanding of how armored and mechanized forces were used to effectively combat an insurgency. The progression of the conflict on both the communist and western side witnessed an early aversion to the use of tanks in conducting an insurgency/COIN fight. Paradigms established by political and military leaders and solidified through misconceptions or dated information resulted in the slow commitment of armor forces and opportunities lost. Once armor and mechanized units were committed to combat in Vietnam, innovations in equipment design and employment were instantaneous validating its effectiveness and leaving an irreversible mark on U.S. Army doctrine and tactics. The use of armor in Vietnam spans the duration of the conflict and involves not only the U.S. but also France, the Republic of Vietnam and the Democratic Republic of Vietnam. The participants learned valuable lessons, some of which had to be relearned multiple times over the course of this conflict. Those lessons influenced the way the American military conducts COIN operations especially with regards to the employment of armor and mechanized forces. Although the study of Vietnam is paramount to understanding an insurgency, this chapter is not a definitive work about the conflict. This chapter will focus on the armor and mechanized forces that were employed, key engagements that shaped policy in regards to armor or demonstrated how armor was used, and finally the lessons learned, contributions, and innovations made in regards to armor and the COIN fight.

The use of armor in Vietnam can be traced to the French Expeditionary Force following the Second World War. In an attempt to defeat communist insurgents and

regain former possessions in Indochina, the French deployed ground forces to Vietnam. Along with conventional light and motorized infantry as well as Close Air Support (CAS), the French employed armored squadrons equipped with obsolete U.S. vehicles such as the M24 Chaffee tank, the half track, and the M-3 Grey Hound Scout Car.¹ The French strategy utilized the mobility of the mechanized and airborne forces to envelop the Viet-Minh in an attempt to force a set piece battle.² The Viet-Minh, being a highly mobile dismounted force, continued to out-maneuver the French units attempting to fix them. The Viet-Minh drew the French away from the coastal centers of population and into the jungles and mountains of Vietnam's interior. This terrain severely limited French mounted mobility. The Viet-Minh dramatically increased the French area of operations, over extending the limited numbers of French forces. Reacting to the increased battle space the French were forced to use their armor and mechanized units in an increasingly defensive role, particularly due to the limited availability of infantry units to attach to the armor squadrons. The lack of man power and the requirement to conduct decentralized operations over a large portion of Vietnam resulted in the piecemeal committal of tanks to support various infantry operations as needed.³ This piecemeal employment prevented close relationships from forming between infantry and assigned armor forces. It also prevented the establishment of an armored reserve that could rapidly reposition to support local infantry, negating the speed and surprise aspects which are hallmarks of an armored force. This dispersion of forces over a huge geographic area wreaked havoc on French logistical capacity, especially with repair parts, which were in high demand due to the age of the equipment and harsh terrain in which it operated.

In 1954, the defense of Dien Bien Phu absorbed much of the French combat power in the central highlands of Vietnam.⁴ The French forces expanded their reach to counter the Viet-Minh escalation in the mountain plateau area. Despite their limited manpower, the French Forces organized highly mobile assault units called a Groupement Mobile (GM). These were motorized infantry Task Forces (TFs) with attached artillery and armor companies, task organized to provide a rapid response to Viet-Minh attacks across a large geographic area. Although successful in their ability to operate over vast areas and support French outposts in remote areas, The GM's main asset was also to be its downfall. The mobility that allowed the GM to strike over large areas as provided by wheeled vehicles and personal carriers actually tied the unit to the road. Being road bound made the GM highly susceptible to ambushes which the extremely adaptive Viet-Minh capitalized on and used to decimate the French mounted forces. The Viet-Minh enjoyed tactical success with hit and run tactics utilizing tremendous cross country mobility. This mobility allowed them to choose the engagement areas and quickly reposition from attack to attack. The Viet-Minh possessed the ability to increase the scope and lethality of their operations, continually attriting the GM over a period of months. Although most ambush sites were chosen due to the canalizing factors of terrain that prevented maneuver, French armor platoons were able to overcome the restrictive terrain, bringing their firepower and speed to bear, defeating the Viet- Minh and rescuing their comrades in the kill zone. However, the GM's armor platoons were not numerous enough to affect the final outcome and the GM was rendered combat ineffective through a series of coordinated ambushes. Although the successful use of the GM's tank platoons validated the use of armor in Vietnam, the insufficient valid capacity and capability of

mechanized forces paired with the adaptability of the enemy overshadowed all positive demonstrations. The overall defeat of French forces directly influenced U.S. decisions about future use of heavy forces in South East Asia throughout the 1960s. U.S. military leaders failed to realize the full potential of armored forces in Vietnam and required additional demonstrations to endorse their use.

In the interim between the departure of French forces and the en-mass arrival of U.S. forces, the Vietnamese Armor and Reconnaissance Corps continued to develop and provide security to the government in the south. Originally trained and organized by the French, Army of the Republic of Vietnam (ARVN) armor slowly began to develop with increased U.S. influence. In 1955 when the U.S. officially recognized the Republic of Vietnam, the ARVN armored force was reorganized under the U.S. Army Modified Table of Organization and Equipment (MTOE) model and the ARVN Armor School structured after the U.S. Army Armor School at Fort Knox, KY. An educational exchange program was instituted to train Vietnamese Armor officers at the U.S. Armor School.⁵ The exchange also provided U.S. Armor advisors to the Vietnamese armor battalions. Although commendable in their efforts, the educational and advisor initiative did little to change the Vietnamese hold on French doctrine or the U.S. perception that the terrain in Vietnam made it an infantry fight.⁶ The aged fleet of World War II vehicles and the political bureaucracy kept Vietnamese armor primarily in the defensive role.⁷ ARVN armor earned the name “Coup Troops” in 1963 after being involved in instituting the regime change removing President Diem from power and orchestrating his murder.⁸ The ARVN Armor Corps also provide security in the capital and focused primarily on protecting the regime rather than fighting the VC.

The greatest change in Vietnamese armor and mechanized forces was in 1962 with the introduction of two companies of M113 armored personnel carriers. The ARVN units successfully employed the new vehicles during a series of operations conducted in the Plain of Reeds in the Mekong Delta. This location had been an area favored by the VC since the time of the French due to marshes and rice paddies which prevented most wheeled and tracked maneuver. During 1962 operations in the Plain of Reeds located in the Mekong Delta, ARVN mechanized units capitalized on the M113's excellent cross country mobility, amphibious capability, and speed, by charging enemy positions while remaining mounted. The mounted infantry successfully engaged enemy targets from troop hatches while continuing to move. The speed and firepower of the ARVN attacks disrupted the enemy, prevented their ability to deliver aimed fire at the mounted force, and sent the VC into a panic. The VC was not able to regain order and slip away until the majority of the M113s became mired. The result of the action was 150 VC Killed in Action (KIA) and multiple crews served weapons systems captured. More importantly this attack validated the use of the M113 in Vietnam, provided the tactical employment of the Armored Personnel Carrier (APC) as a combat vehicle not just a troop transport, and began the resurgence of aggressive attacks by ARVN forces. The lessons learned of fighting mounted would be brought back to U.S. forces through the advisors and eventually become doctrine.⁹ The introduction of the M41 light tank to the ARVN armor formations to replace the antiquated M24 Chaffee tank also provided increased mobility and lethality, breaking the road bound tactics previously learned from the French.

The introduction of new equipment alone could not completely enable the Vietnamese forces to defeat the VC. The ARVN needed doctrine and especially

improved communication and integration between the dismounted infantry, mechanized infantry, and tanks to maximize their impact. This could only be accomplished through education and training which proved to be a slow process.

The success of Vietnamese Armor units specifically, the proof that tracked vehicles could be used to effectively engage and defeat the VC served to validate the deployment of U.S. armor and mechanized forces to South East Asia. The early success enjoyed by ARVN forces would not, unfortunately, last for long. The VC countered the ARVN threat by incorporating anti tank weapons such as recoilless rifles, mines, armor piercing machinegun rounds, and the Rocket Propelled Grenade (RPG) 2 and 7 into their arsenal as early as 1963. The VC developed a training pamphlet on the defeat of mechanized forces and by 1965 these weapons and tactics had filtered down to the insurgent platoon level with devastating results for ARVN forces.¹⁰

Though ARVN forces were successfully utilizing tanks and APCs since 1962 it was not until 1965 that U.S. Marine armored forces arrived in Vietnam and only then through an accidental oversight. U.S. government officials disapproved of the use of armor in Vietnam as U.S. Ambassador Maxwell Taylor stated that tanks were “inappropriate for counterinsurgency operations.”¹¹ Justification for the reliance on light infantry and the new air mobile concept rather than armor was made by citing the failure of the French armor a decade prior, the tempo of operations of heliborne infantry as compared to land bound tracked vehicles, the perception of escalation associated with heavy forces, and the fact that no U.S. ground force had ever demanded ARVN tank support.¹² The largest detractor preventing the deployment of armor forces was manpower. Although infantry and armor battalions rounded out to within 100 men of

each other, the higher number of combatants as compared to base camp bound support and logistics personnel made the choice of infantry appear to provide more combat power. Caps placed on troop levels imposed by the U.S. government influenced this decision greatly. Therefore the armored and mechanized battalions of several U.S. Divisions that deployed early in the conflict remained behind in the U.S.

Although misguided, the aversion to armor was widely accepted, however, the Army leadership did authorize a battalion of M48A3 tanks to deploy as a test bed in 1966.¹³ Tanks of 1st Battalion, 69th Armor, deployed to Vietnam and were in contact with the enemy within hours of debarking from the transport ships.¹⁴ U.S. armor hit the ground running, immediately bringing the fight to the enemy. Though the tank enjoyed early success, its relevance in the COIN fight was still questionable. Tanks were retained at battalion level due to Military Assistance Command, Vietnam (MACV) restrictions on employment and belief the preponderance of jungle terrain being no-go for armored vehicle mobility. The initial aversion to Armor forces continued until troop level limits were increased in 1966. The early Armor and mechanized forces learned many lessons which were packaged through ARVN advisors and U.S. personnel in an attempt to provided insight into vehicle performance and employment. These packages also provided information on field modifications, terrain descriptions, and recommended tactics, techniques and procedures should additional heavy forces be deployed in the future.¹⁵

Operation Circle Pines in 1966 proved to be the turning point for the usage of heavy armor in Vietnam. The U.S. battalions were well prepared, using knowledge and experience passed back from Vietnam to train while stateside, rather than face the ad-hoc

restriction governed environment their predecessors were forced to operate under when they arrived in theater. Three armor units from the 25th Infantry Division conducted search and destroy missions into a VC safe haven north of Saigon. This operation provided the opportunity for armored vehicles to demonstrate their capability to traverse jungle terrain, leading military commanders to reevaluate the use of armor in Vietnam. The success of this operation debunked the myth that armor could not function in the jungle. American forces had reintroduced mobility and firepower to land combat and proved that tanks were no longer tied to the roads but could blaze a trail into terrain the enemy had previously declared as safe.¹⁶ Circle Pines served to solidify the role of armor in Vietnam and validate the use of tanks in the COIN fight.

In 1967 the 11th ACR conducted a series of operations focused on denying the VC the use of base camps located in dense jungle regions. Operations Atlanta, Cedar Falls, and Junction City relied on fast moving armor units to quickly penetrate enemy safe zones and deliberately clear the base areas. In each operation, tanks conducted jungle busting missions to strike deep into enemy territory, maintaining the initiative. These attacks limited the VC's ability to conduct ambushes and mine strikes on main supply roads.¹⁷ Numerous VC medical facilities, tunnel complexes, training facilities and defensive positions were discovered and destroyed. The ACR commander, Colonel Roy W. Farley, noted in his After Action Review (AAR) comments that due to the extremely close nature of engagements, if it were not for the protection offered to his Soldiers by the armored vehicles, the regiment would have sustained a marked increase in the number of friendly casualties.¹⁸ The VC conducted a strong defense of their base camps, utilizing the largest number of anti tank rockets and grenades as well as recoilless rifle rounds seen

at that time. Despite the sheer volume of VC anti tank weapons they resulted in the loss of only four U.S. vehicles during Operation Junction City. The VC relied heavily on mine strikes to combat the ACR shifting the focus from the paved routes to trails. Twenty-nine vehicles were damaged or destroyed due to mines during Operation Junction City. The VC resorted to mining or constructing a log obstacle with booby traps on the routes ACR forces had cut into the jungle in hopes they would be utilizing the same trails as exit paths. Lastly, during such complex operations the vital need to synchronize combined arms integrated assets and employment of attached and supporting units such as the air cavalry is a testament to the ability of the ACR's staff as well as its combat leaders.¹⁹

Throughout the Vietnam conflict the insurgency ranged from low intensity, small unit, hit and run tactics to large scale, large unit actions. One such operation in which the enemy employed an armored force was a 1968 attack on the Lang Vei Special Forces base. This attack was the first to include the use of armor by the North. North Vietnam possessed Soviet furnished PT-76 amphibious light tanks, T-54, and T-59 Main Battle Tanks (MBTs); however, they had never before utilized their armor in South Vietnam. Eleven, North Vietnamese Army (NVA) PT-76's, attacked a Special Forces base at Lang Vei in 1968, breaching the wire in support of the infantry assault. The Special Forces defenders, who possessed no armor assets, were forced to engage the NVA tanks with 106mm recoilless rifle fire and 64mm Light Antitank Weapon (LAW) anti tank rockets, CAS and artillery fire.²⁰

During the 1968 Tet offensive U.S. and ARVN armor played a major role in the defeat of insurgent forces across the South Vietnamese centers of population which were the enemy objectives for the offensive. The 25th Infantry Division's, 3rd Squadron, 4th

Cavalry Regiment, was a reaction force to prevent the base at Tan Son Nut from being overrun. The initial report had been that a squad of VC breached the wire and were attacking the airfield's command bunker. When C Troop 3/4 Cavalry (CAV) responded, it quickly realized that it was fighting two regiments of VC. Most of the vehicles of C Troop were destroyed or damaged during an initial volley of anti tank fire. The few surviving tanks continued to suppress the enemy, preventing further penetration into the base. Individual tanks would break contact when their ammunition was expended, pull back a few hundred meters to resupply at a hastily established landing zone that was being constantly stocked by a helicopter with machinegun and 90mm main gun rounds. Once rearmed the tanks would return to the fight allowing their wing tank to withdraw and rearm. The remnants of C Troop held against the Vietcong (VC) onslaught until the rest of the squadron arrived and cleared the remainder of the airfield and adjacent village.²¹ This operation demonstrated the need for mobile firepower to provide commanders with a flexible reserve to respond to enemy attacks.

The siege of the imperial city of Hue exemplifies the successful use of armor in an urban environment. U.S. Marine infantry supported by M-48 tanks and Ontos light tanks conducted house by house clearing operations against entrenched VC forces. ARVN armor assaulted the VC strong point located in the citadel and the 1st Cavalry Division isolated the city, preventing the reinforcement of the defending VC. Directives from the Democratic Republic of Vietnam specified that the insurgents should abandon operations in urban areas with the exception of Hue, which was to be held at all costs. After overcoming collateral damage restrictions in an attempt to limit the destruction of the historic city, an infantry, armor, and artillery combined force was able to secure the

city in 26 days. Colonel (Retired) C.R. Casey, then commander of A Company, 1st Tank Battalion, USMC, in Hue, recalled the NVA reliance on land mines to impede armor within the city. Randomly placed mines produced no casualties however they immobilized two A Company tanks and one recovery vehicle. These damaged vehicles tied up operations for the better part of the day.²² Lieutenant Colonel (Retired) Bob Johnson USMC, a platoon leader during the clearance of Hue recalled the effective use of tear gas to drive the insurgents from their positions in the rubble. This technique is effective when the firepower of the tank cannot be fully used due to limitations or restrictions emplaced on engaging enemy in cultural or protected structures. The Ontos, a light tank armed with six external 106mm recoilless rifles, proved to be perfect for fighting in the confined streets of the ancient city, providing large firepower in a small package. The Marine Corps also utilized the M62 flame thrower tank in the urban environment to destroy fortified positions within buildings.²³

In the aftermath of the battle of Hue, 40 percent of the city was reduced to rubble and an estimated 5,000 enemy had been killed. Friendly casualties were significantly lower with the Marines suffering 142 killed, the Army reporting losses of 74 cavalrymen, and ARVN forces sustaining 384 KIA. Friendly casualties would have undoubtedly been higher had it not been for the survivability afforded them by the armored vehicles. AARs from operations in Hue showed a lack of training for urban operations of U.S. forces. ARVN forces had in-depth experience operating in cities due to previous urban security missions they conducted during the numerous coups. The need for field phones on the hulls of M-48 tanks was identified as a short coming. The field phone would allow the accompanying infantry to communicate directly with the tank commander, solidifying the

tank infantry team. The need for obscuration to screen infantry in the movement from cover to cover was vital for survival. With the duration of operations and the rapid expenditure of smoke rounds, resourceful tank crews used high explosive rounds fired into plaster buildings to obscure enemy visibility, allowing the dismounted infantry to maneuver unseen.²⁴

In 1969, the 11th ACR conducted Operation Kentucky Cougar and Montana Raider, during which armored forces struck enemy supply and transit zones between Cambodia and Vietnam. These highly effective operations resulted in 247 enemy killed and 42 tons of rice captured through search and destroy operations. The operation was not without consequence as 69 vehicles were combat losses. Of the losses, 53 vehicles were damaged or destroyed due to mines. The mine was one of the few ways the out gunned Viet-Cong could still inflict losses on mechanized forces. A high number of M551 Sheridan light tanks also became combat ineffective due to power train failures. Unlike the heavier M-48 tanks, the strain placed on the engine, transmission, and final drive assemblies of the Sheridan tank by jungle busting, which used the weight and power of the tank to cut a trail in the dense growth, was apparently more than the drivetrain could handle.²⁵ The 11th ACR developed tactics to rapidly defeat the enemy in combat zone III. The main tactic was known as the pile-on concept. This was refined during the ACR's operations in Vietnam from 1969 until 1971. The principle of pile-on epitomized combined arms maneuver. Helicopter scouts performing reconnaissance would identify a target and relay the information to an aero rifle platoon, who would be inserted and gain contact with the enemy developing the situation. A reaction force of tanks and Armored Cavalry Assault Vehicles (ACAVs) supported by artillery and CAS

would immediately be dispatched to either destroy or fix the enemy depending on the situation. Once the enemy was engaged, the regiment assumed control and committed other units to gain a favorable force ratio overmatch, leading to the destruction of the enemy. This concept was adjusted during the monsoons when vehicles had to be replaced with dismounted infantry due to mobility issues.²⁶ Through the use of deep armored penetrations into enemy safe havens and violent action once an enemy force was identified, the 11th ACR severely limited VC and NVA freedom of maneuver and denied the enemy a base of operations. Night patrols and ambushes produced high enemy casualty rates and constricted supply lines. The NVA and VC avoided direct fire contact with the ACR at all costs, instead focusing on mines, ambushes and defense of their remaining base camps.

U.S. armor forces had only one tank against tank engagement which occurred at Ben Het in 1969. A NVA mechanized force attempted to attack the Special Forces camp at Ben Het in order to destroy the U.S. self propelled artillery pieces that had been firing on the Ho Chi Minh trail. Tanks from 1-69, Armored Battalion were also stationed at the base and engaged the NVA armor, resulting in two PT-76's and one NVA APC destroyed with one U.S. tank receiving minor damage.²⁷ During the 1972 NVA invasion of the Republic of South Vietnam the M48-equipped 20th ARVN Tank Regiment participated in defensive operations in vicinity of Dong Ha, resulting in the destruction of an NVA tank column on the first day of the battle and numerous enemy kills on the following days. The ability to accurately engage the enemy armor resulted from the unit honing its skills through gunnery and training. Losses due to AT-3 sagger anti tank missile systems and the inability to receive fuel or ammunition resupply limited the unit's success,

causing it to conduct a retrograde to subsequent defensive lines. ARVN mechanized forces conducted delaying actions against NVA armor lead forces across all military zones including ARVN tank supported infantry attacks to secure the city of Kotum.

Eventually the ARVN forces prevailed, supported by U.S. and South Vietnamese air support to halt the NVA advance.²⁸

Adaptations to vehicles and the improvisation of tactics to employ their vehicles led to tremendous flexibility and lethality of armor and mechanized forces. The incorporation of lessons learned from engagements quickly found its way into practical application. During the Battle of Ap Bac in January of 1963, 14 M113 .50 cal gunners of the 2nd ARVN ACR died of wounds received while exposed in the hatch, firing their machine guns. This combined with similar results from other engagements led to locally manufactured gun shields being installed increasing crew survivability.²⁹ Building on the innovations of early ARVN M113 gun shields and the addition of side mounted 7.62 M-60 machine guns, the ACAV came into being. No longer was the M113 solely a means to transport soldiers to the battlefield. The infantry taxi had evolved into a combat vehicle from which the infantry could fight, able to penetrate thick jungle and bring the fight to the enemy while offering protection from small arms fire and limited mine blasts survivability. Working in concert with aero rifle platoons or scouts, dismounted infantry, artillery, and CAS, the tank and APC completed the synthesis of combined arms operations. Tanks participated in a multitude of missions including seek and destroy attacks, convoy security, fixed site security, perimeter defense, and Quick Reaction Force (QRF). Armor units were also able to successfully diverge from doctrine, becoming the fixing force allowing the more maneuverable aero rifle unit to act as the maneuver

force.³⁰ Armor limited the effectiveness of the VC's most successful tactic, the ambush. Jungle busting freed mechanized units from predictable routes and the survivability inherent in the tank allowed it to survive the initial contact and either destroy the ambushers or suppress the attackers until CAS or artillery could be employed to destroy them.³¹ Tanks also provided overwhelming fire power to the defense, utilizing canister rounds, flechett rounds and multiple machineguns per platform. The ability to conduct night operations with the M-48's infrared (IR) searchlight also proved critical. In one instance a platoon of M-48s destroyed numerous VC san pan boats that were infiltrating supplies under the cover of darkness, a task that dismounted infantry would have found untenable.³²

To mitigate the danger posed by VC emplaced mines, armor forces conducted numerous mine denial and counter ambush patrols at night. Crews of the aluminum hulled M113 resorted to field expedient methods of protection including sand bagging the floor or placing multiple layers of ammo cans to absorb the blast. As the size of the mines increased, most soldiers resorted to riding on top of the personnel carrier rather than in it, negating the initial survivability against small arms fire that made the vehicle so successful. The need for mine detection and protection led to the development of the tank mine roller which proved marginally successful. This expendable device detonated an emplaced mine at a safe distance in front of the tank, preventing damage or injury to the crew. However, it could only be utilized on improved roads.

Armor and cavalry crewmen also sought field expedient methods to defeat the VC's anti-armor shaped charges contained in the RPG-7 rockets and recoilless rifle projectiles. An easy solution for stationary vehicles was to erect a length of cyclone chain

link fence in front of the vehicle to detonate the round and dissipate the energy prior to it contacting the vehicles hull. While the vehicles were on patrol, units attempted to lead with the most survivable platform, usually a tank. A lesson carried over from tankers in the Second World War and the Korean conflict was to add extra sections of track or steel planking to the hull or turret in order to increase the distance an enemy round had to penetrate or to dissipate the rounds energy.³³ Experimentation in the use of add-on slat armor as well as the addition of firing ports on the M113 allowed the infantrymen to fire their rifles from within the vehicle.³⁴ The slat armor proved too heavy and the catastrophic nature of mine blasts prevented the further use of firing ports as the dismounted infantry preferred to ride on top of the vehicles rather than inside. Even though both innovations were initially abandoned, both the slats and firing ports would find their way into future U.S. vehicle designs. Although the Vietnam War demonstrated that armor and mechanized infantry were capable of successfully fighting an insurgency, vulnerabilities also became apparent. Since most engagements took place at ranges of less than 300 meters crews needed to be proficient at both the established distance gunneries as well as the close in knife fight. Although the M48 proved quite survivable when hit by a mine the M113 and M551 Sheridan did not, resulting in a catastrophic loss to both vehicle and crew.

The final innovation of note during the Vietnam War was the incorporation of Air Defense Artillery (ADA) vehicles in the role of convoy security. The use of ADA systems as antipersonnel weapons was not unique to the Vietnam War as employment in such a role can be traced to both the Second World War and the Korean conflict. Since U.S. air superiority was not challenged in the skies over Vietnam, ADA could be utilized

for non-standard missions such as perimeter defense. The vehicle used for this task was the M42 Duster, possessing an armament of twin 40mm Bofors cannons mounted in an open turret on an M-41 light tank chasse. This vehicle possessed superior mobility combined with a devastatingly high rate of fire which was used with devastating results against massed infantry during the Korean War. When paired with two truck mounted quad .50 cal ADA machine gun systems it proved to be an extremely lethal detachment, able to decimate an attacking VC unit. Limited experimentation was also conducted with the newer M113 mounted 30mm Vulcan gun with tremendous results.³⁵ The use of ADA in addition to other branches such as the military police freed armor and mechanized infantry from the task of convoy security allowing the focus of combat power to be the offensive operations. The requirement for security of logistical convoys in a battle space with no secure rear area would continue to plague U.S. forces until their withdrawal from Vietnam in 1972. Although logistic units attempted to provide their own security with fabricated gun trucks mounting a variety of acquired weapons systems and armor made from scrap steel plate, no serious thought was given to training and equipping support units to provide their own security.³⁶

The Vietnam War witnessed the evolution of U.S. military thought, having begun with a clearly delineated line drawn from the large mechanized conventional war anticipated in Europe to the polar opposite insurgency which would be fought by light airmobile Infantry. Eventually Armor and Cavalry units were deployed and together with the light infantry battled the insurgents with great success. The ACR emerged as the most capable formation to effectively fight an insurgency. The ACR provided a commander the ability to tailor his force to face the threat with a response ranging from heavy armor

to light Infantry. The assigned or attached rotary wing reconnaissance and lift assets increased the commander's situational awareness as well as improved his ability to respond to a highly mobile enemy once identified. Utilizing the airmobile force in concert with the armored and mechanized forces the commander was able to fix the insurgent force and strike from a position of his choosing.

Through trial and error the American military revised or invented tactics to meet the threat, vehicles were modified to suit the mission, and the fighting spirit of the tanker, cavalryman, and scout prevailed. Utilizing the equipment available to penetrate enemy safe havens and bring the fight to the NVA and VC, enterprising leaders capitalized on the tank and ACAV's speed and mobility and incorporated the light and airmobile forces to deny the enemy freedom of maneuver and ensure the insurgents defeat. Unfortunately, after the armor and cavalry forces withdrew from Vietnam the focus again became the vast Soviet tank divisions in Europe. This shift of focus resulted in losing much of the institutional knowledge gained on how to fight an insurgency, only to be relearned through blood loss by future generations of mounted Soldiers.

¹Simon Dunstan, *Armor of the Vietnam Wars* (London: England Osprey Publishing Ltd., 1985), 3.

²Bernard B Fall, *Street Without Joy* (Mechanicsburg, PA: Stack pole Books 1961), 31.

³Don A. Starry, *Mounted Combat in Vietnam: Vietnam Studies* (Washington, DC: Department of the Army, 1978), 5.

⁴Fall, 185.

⁵Starry, 18.

⁶Ibid., 21.

⁷Ibid., 18.

⁸Ibid., 48.

⁹Ibid., 24.

¹⁰Ibid., 47.

¹¹Ibid., 55.

¹²Ibid., 56.

¹³Ibid.

¹⁴Michael Green, *War Stories of the Tankers: American Armored Combat 1918 to Today* (Minneapolis, MN: Zenith Press, 2008), 132.

¹⁵Starry, 60.

¹⁶Ibid., 64.

¹⁷Department of the Army, *Operation Junction City, 11th ACR, Combat AAR* (Washington, DC: United States Army, 15 November 1967), 40.

¹⁸Ibid., 41.

¹⁹Ibid.

²⁰David B. Stockwell, *Tanks In the Wire* (Canton, OH: Daring Books, 1970), 126.

²¹Dwight W. Birdwell, *A Hundred Miles of Bad Road,: An Armored Cavalryman in Vietnam 1967-68* (Navato, CA: Presidio Press, 1997), 47-64.

²²Green, 141.

²³Ibid., 146.

²⁴William Thomas Allison, *The Tet Offensive, a Brief History with Documents* (New York, NY: Routledge Publishing, 2008), 54.

²⁵Department of the Army, *HQ 11th ACR, Lessons Learned* (Washington, DC: Department of the Army, 18 August 1969), 20.

²⁶Ibid., 11.

²⁷Starry, 151.

²⁸Ibid., 211.

²⁹Ibid., 18.

³⁰Ibid., 71

³¹Ibid.

³²Ralph Zumbro, *Tank Sergeant* (New York, NY: Pocket Books, 1988), 30.

³³Dunstan, 24.

³⁴Green, 47.

³⁵Ibid., 50.

³⁶Starry, 222.

CHAPTER 3

SOMALIA

The study of U.S. operations in Somalia is often limited to the counter militia raids conducted by U.S. special operations and light infantry forces during the fall of 1994. Although this period represents a focal point of media attention as well as the peak of violence for Operation Restore Hope, one should analyze the entire operation from its inception in 1992 until its end in 1994 in order to understand the environment fully. In order to understand the challenges of employing, and results of using, an armor and mechanized force in a volatile humanitarian relief and security operation, attention must be paid to the wide variety of coalition forces involved, most of whom included mechanized units.

To understand why U.S. tanks ended up patrolling Mogadishu during a humanitarian relief mission, it is important to consider the root causes of the Somali crisis. Somalia was a failed nation with large weapon stock piles remaining from the country's post colonial acceptance of Soviet military aid.¹ These weapons, combined with additional foreign military aid to the then empowered regime of Siad Baree, fueled decades of clan warfare and internal strife destroying much of the nation's infrastructure including the capital city of Mogadishu. As rival clans ousted Baree from power in 1990, two powerful militias fought a protracted conflict for control until the United Nations (UN) brokered a cease fire in 1992.² With the war ravaged country unable to provide food or water to its citizens, the clans in Somalia turned food into a weapon, attempting to starve the rival factions. The 3,500 UN peacekeepers were unable to effectively distribute or secure the relief supplies and the relief workers. The U.S. responded by

conducting Operation Provide Relief, airlifting humanitarian relief supplies into Somalia and responded to the UN's request for forces, authorizing 30,000 troops for deployment as part of the UN International Task Force.³

In December of 1992 the first U.S. forces arrived in Somalia. A brigade sized element from the U.S. Marine Corps was followed by a brigade from the U.S. Army's 10th Mountain Division. The Marine Expeditionary Force (MEF) in support of Operation Restore Hope consisted of a mechanized unit equipped with Light Armored Vehicles (LAV) 25 and less than a battalion of M1 Abrams tanks. The battalions from the 10th Mountain were equipped with HMMWVs.⁴ This force joined mechanized coalition forces from Canada, France, Italy, Belgium, Pakistan, Turkey, Australia and 10 additional support nations.⁵ The Marines' mission was twofold; first to secure the relief effort, and second to disarm the militias. Coalition forces faced an enemy equipped with a multitude of weapons ranging from small arms and recoilless rifles mounted on civilian trucks to antiquated U.S. M47 medium tanks.⁶ The disarmament operations would include the collection and destruction of Somali heavy weapons and security operations. The Unified Task Force (UNITAF) threat assessment was downgraded due to a decrease in violence, limiting the ground combatant commanders' request for additional heavy forces including armor. To emphasize this general sentiment, a journalist reportedly described the Marine LAV 25 and M1 tank patrols as "embarrassing overkill."⁷ As the disarmament operations increased, a Marine convoy was fired on by a "technical vehicle" from General Aideed's militia. In retaliation the Marine force seized a weapons cache belonging to the militia, destroying another cache and its defenders by attack helicopter and missile fire from armored personnel carriers.⁸ Despite limited incidents of sniper and small arms fire the

threat level dissipated to the point where Marine commanders deemed heavy armor such as tanks unnecessary, ordering them reloaded aboard transports. Mechanized forces were used with success in the countryside outside the urban center of Mogadishu. Coalition partners such as the Italians and Pakistanis utilized their M-48 and M-60 tanks for static check points assisting in the disarmament process.⁹ Operations continued with limited hostile fire until the spring of 1993. With decreased violence levels the UN transitioned control of forces from UNITAF to UNOSOM II under UN Security Resolution 814, assigning participating nations geographic regions within Somalia in order to begin relief and nation building activities. Under UN Resolution 814, a reinforced battalion from the 10th Mountain Division along with assault, lift, and transportation helicopter assets would serve as the UN QRF.¹⁰ The choice of a light infantry force as QRF was driven by the belief that street riots and civil unrest would be the prime threat. Major General Thomas M. Montgomery, commander of U.S. Forces Somalia and deputy commander of UNOSOM II, realized the potential for violence due to the continued presence of well armed militias and the ability of those militias to turn their hostilities toward UN Coalition forces especially in the complex terrain of Mogadishu. To counter this threat Major General Montgomery obtained 72, M113 personal carriers and a small number of M48 tanks from North Atlantic Treaty Organization (NATO) war stocks in order to increase the capability of the Pakistani brigade charged with controlling a volatile portion of the city. On 5 June 1993, forces of General Aideed's militia used RPGs and crew served weapons to ambush a Pakistani company on 21 October on a road in Mogadishu. That same day, militia also overran a Pakistani section guarding a relief material distribution point. These attacks resulted in 23 Pakistani soldiers killed. The militia had

fired on the convoy from behind unarmed civilians lining the street. Militia forces also erected hasty road blocks to trap vehicles in the kill zone of the ambush. A relief column attempted to assist the engaged unit, but was also engaged with small arms fire. The militia emplaced numerous road blocks throughout the city to delay further rescue efforts. The ambush at the distribution station was initiated by the militia, again from behind the cover of unarmed civilians. Two separate rescue efforts of APC equipped patrols attempted to respond, but could not penetrate the road blocks. Italian M-60 tanks from an adjacent sector responded and were able to breach the militia obstacles and secure the ambush site. At the same time, weapons holding areas in the vicinity reported a drastic and unexplained increase in the number of anti tank weapons on hand compared to listed quantities on inventories. It would not be until after the October hostilities that the UN learned militia forces were behind the massing of anti tank weapons in UN facilities. The purpose for this was to eventually seize these locations and use the facilities as a militia weapons distribution point during anticipated hostilities. There were also numerous reports of technical vehicles, missing from holding areas in the city. Undoubtedly the militia was responsible. All these actions were indicators of Aideed's plan to increase attacks, using the captured weapons and UN disarmament holding areas.¹¹

On 17 June 1993 during a counter Aideed militia site search mission of the Digfer General Hospital, a contingent of Moroccan soldiers tasked with establishing the cordon of the compound were engaged with small arms fire and recoilless rifle fire resulting in six killed and 43 wounded.¹² The unit, under UN orders, could not use tank main gun fire or Tube-launched, Optically-tracked, Wire command data link (TOW) rockets due to the hospital being on the UN protected infrastructure list. After confirmation that Moroccans

were receiving significant fire from the hospital, UNSOM II repealed the order and the Moroccan wheeled gun systems began engaging the militia positions with both rocket and main gun fire.¹³ A U.S. special operations team working with the Moroccans had their HMMWV disabled by RPG fire, requiring the Moroccans to recover it during the battle.¹⁴ UN headquarters order the French Armored QRF to conduct a relief of the mauled Moroccan task force but the relief force arrived too late to save the Moroccan commander from being killed by a recoilless rifle round that destroyed his soft skinned truck. The French armored force gained fire superiority over the militia and cleared the adjacent military academy of insurgents, bringing the battle to an end at a cost of three of their own killed.

Militia forces began targeting U.S. units as evident by an 8 August improvised mine strike that killed four U.S. Military Police Soldiers (MP). The MP's light skinned HMMWV in which they were riding offered little protection from mines or small arms fire. As attacks continued to escalate throughout the spring and summer of 1993, Major General Montgomery requested the deployment of an M1 tank and M2 Bradley equipped ACR to face the threat of outbreaks of insurgent violence. The light force on hand could not effectively oppose the militia should they begin high intensity operations against the coalition forces. The U.S. Secretary of Defense, Les Aspin, denied Major General Montgomery's request due to the political implications of assigning a heavy force to operate in what was still considered a relief operation.¹⁵ Through September and October of 1993 violence toward coalition forces reached the highest point of the operation. The UN tasked the 1st Brigade of the 10th Mountain Division to conduct the QRF mission for the entire area of operations. The UN chose the 10th Mountain to perform missions in

built up areas due to their previously proven tactical ability. QRF support to the majority of coalition operations in Mogadishu became standard practice despite the QRF units being nearly evenly matched in firepower by the militias they encountered.¹⁶ The Somali militias learned how the American units fought using the engagements of the summer and fall of 1993 to improve their communication network and ability to mass their forces.

Fulfilling the role of QRF, 2nd Battalion, 14th Infantry Regiment, discovered its units experienced a tremendous loss of mobility when militia forces initiated a sustained engagement. If the militia could fix the dismounted or HMMWV borne infantry as they did on 13 September during a search operation of a militia compound, they could inflict moderate casualties and prevent the mission from being accomplished. The militia was able to react to the U.S. operations, massing superior numbers in less than 30 minutes and volley firing RPGs in an attempt to inflict a large number of casualties which would further immobilize the dismounted infantry.¹⁷ The militia emplaced road blocks to impede QRF mobility and arranged casualty producing weapons to cover the few remaining open routes. The lack of organic armor which would have provided mobility and survivability to the infantry in such a situation instead required the QRF to coordinate with multiple foreign nations for use of their armored assets which was a complicated and unreliable affair. To further compound the problems, U.S. forces depended on helicopter support and their own tactical ability to regain the initiative due to their not possessing the heavy weapons or tactical mobility associated with a mechanized force. Despite the eventual success of 2-14 Infantry to evacuate its wounded and break contact, a limitation was identified and reported higher. The report identified that U.S. units suffered a deficit in fire power and mobility against the militia forces they fought.¹⁸

In response to this shortcoming, additional forces from the U.S. were authorized for deployment. Rather than mobilize the ACR as previously requested by Major General Montgomery, elements of the 75th Ranger Regiment, an elite light infantry unit, deployed to Somalia.¹⁹ Task Force Ranger conducted a series of raids targeting the leadership of General Aideed's Somali National Army (SNA) militia. The most infamous raid evolved into the battle of Mogadishu on 3 to 4 October 1993.²⁰

On 3 October, having successfully shot down two UH-60 helicopters, militia forces engaged and fixed the light units of the 75th Ranger Regiment and U.S. special operations involved in the raid. Extensive militia use of road blocks and barricades severely restricted Task Force Ranger's HMMWV mounted reaction force and the threat to helicopters by RPGs negated the use of helicopter inserted QRF units. After repeated failed attempts by the HMMWV equipped relief forces to penetrate the barricades General Montgomery and his coalition staff at UNOSOM II headquarters, began a frantic scramble to get armor support. An Italian mechanized force containing M-60 tanks and in close proximity to the battle could not be committed without permission from the Italian government in Rome. A request to utilize Indian T-72s also required expressed permission from the Indian Government, preventing their use. Pakistani M48 tanks and M113 armored personnel carriers as well as Malaysian wheeled armored personnel carriers were eventually authorized and responded to rescue Task Force Ranger. Despite national caveats and language barriers, the Pakistani tanks were able to breach the obstacles and maneuver to the location of the pinned down U.S. forces. In some instances, the wheeled personnel carriers could not penetrate the roadblocks and required the dismounted Soldiers to clear the debris in order to continue their move through the

narrow urban streets.²¹ Throughout the entire relief operation, the strain of language barriers, national and command imposed directives governing what the armor vehicles could and could not do, and the lack of previous coordination hampered the infantry and armored reaction force relations. The increase in the time required to conduct the rescue and complications with evacuating the pinned down infantry could have been avoided if the U.S. forces possessed their own tanks.²²

In the aftermath of the battle for Mogadishu, 18 U.S. soldiers were killed, and all HMMWVs used during the operation incurred varying degrees of damage with some vehicles being a total loss.²³ The outdated Pakistani equipment provided the mobility and survivability required to turn the tide against the militia forces. In order to stabilize the situation in Mogadishu, 1st Battalion, 64th Armor Regiment, an M1 tank and M2 Bradley fighting vehicle equipped battalion TASK FORCE, deployed and was assigned to the reorganized heavy falcon Brigade QRF.²⁴ As part of a joint display of combined firepower a Marine Expeditionary Unit (MEU) and army tank company team conducted an amphibious landing in vicinity of Mogadishu complete with naval gun fire and attack aviation as a means to demonstrate the offensive capability of the U.S. forces in light of the recent militia attacks.²⁵ The light QRF was quickly restructured as a heavy brigade with engineer, armor, aviation, and infantry assets in order to respond to any further threats posed by the militia forces.²⁶ The presence of the heavily armored joint TASK FORCE prevented any further large scale attacks by militia forces, facilitating the eventual withdrawal of coalition forces in 1994.

Although the majority of direct fire militia attacks occurred in Mogadishu, the threat of improvised mines and limited small arms fire was Somali wide. Both Belgium

and Germany employed armored vehicles with success in peacekeeping operations in and around the southern city of Kismayo. The Australian infantry contingent relied heavily on a modified version of the M113 armored personnel carrier to conduct disarmament and relief effort security in the urban areas of Baldoa province. The Canadian cougar and bison wheeled fighting vehicles secured UN relief convoys providing humanitarian aid in the vicinity of the city of Beletuen. Turkish, Pakistani, and Nigerian mechanized forces participated in security operations in Mogadishu where the protection of the armored vehicle undoubtedly reduced casualties.²⁷

This review of the main actions the U.S. and coalition preformed in Somalia highlights some vital facts. From the political focus, operations conducted by military personnel require attention to be paid to the perception the host nation and world view the mission. Although tanks and infantry fighting vehicles poorly portray the image of a humanitarian relief operation, they do provide superior survivability and fire power to the soldiers tasked with the mission if and when the situation requires them. In Somalia, this need was identified yet largely ignored. When the physical need for armored vehicles was identified, there were no U.S. assets available, requiring the tanks and personnel carriers to be coordinated with coalition partners. Unfortunately, relying on another nation's assets subjected the U.S. force to the owning nation's stipulations and caveats. The Marines of the Marine Expeditionary Brigade (MEB), who initially operated in Somalia in early 1993, possessed M1 tanks in addition to their dismounted or LAV 25 and Amphibious Assault Vehicles (AAV) equipped forces.²⁸ Understanding the enemy had the extensive potential to use RPGs and recoilless rifles against the Marine force, the MEB commander retained the capability to commit his heavy armor, capable of defeating

the known threat. The Marine armor also had established relationships with the infantry and air assets they would be supporting, allowing for their quick reaction and easy coordination. Approving the request of Major General Montgomery for a U.S. ACR would have allowed the force sufficient mobility and firepower, but more importantly increased survivability while operating as an theater wide QRF in a volatile urban environment. As demonstrated in the militia attacks where the enemy engaged coalition forces from behind civilian shields, the relief force required the additional protection afforded by a tank or heavily armored personal carrier. This protection limited not only friendly casualties, but also civilian casualties, affording the crew members additional seconds to accurately engage the threat. Thermal optics on the tank sights and communication abilities provide for an unmatched advantage of detection and precision fire on the urban battlefield. These attributes make the tank or infantry fighting vehicle the prime candidate for check point operations or as part of a cordon force. At the very least, the sheer presence of a tank at a relief distribution point poses the ability to deter militia forces who would be inclined to attack a less well armed force. When used in conjunction with dismounted infantry or relief efforts, the addition of armored vehicles provides the commander with a multitude of responses to a highly fluid, high threat humanitarian operation. The successful use and proven value of the multinational armored and mechanized forces validates the capabilities of tank and fighting vehicle equipped forces to operate in virtually any contingency.

¹Robert F. Baumann, *My Clan Against the World: US and Coalition Forces in Somalia 1992-1994* (Ft. Leavenworth, KS: Combat Studies Institute, April 2004), 12.

²Ibid., 17.

³Ibid., 19.

⁴Ibid., 31.

⁵Ibid.

⁶Ibid., 37.

⁷Ibid., 51.

⁸Ibid., 65.

⁹Samuel M.Katz, *Operation Restore Hope and UNSOM, The International Military Mission of Mercy In Somalia* (Tsuen Wan, Hong Kong: Concord Publications Company, 1993), 49.

¹⁰Baumann, 105.

¹¹Ibid.,109.

¹²Timothy Knigge, *Operation Casablanca; Nine Hours in Hell! :The Story of American Combat in Somalia* (Chapel Hill, NC: Professional Press, 1995), 35.

¹³Ibid., 50.

¹⁴Ibid.

¹⁵Baumann, 116.

¹⁶Ibid., 132.

¹⁷Ibid., 127.

¹⁸Ibid.

¹⁹Ibid., 139.

²⁰Ibid., 149.

²¹Ibid., 152.

²²Kent Delong and Steven Tuckey, *Mogadishu!, Heroism and Tragedy* (Westport, CT: Praeger Publishers, 1994), 71.

²³Baumann, 155.

²⁴Kenneth Allard, *Somalia Operations, Lessons Learned* (Ft. McNair, Washington, DC: National Defense University Press, 1995), 60.

²⁵Baumann, 187.

²⁶Ibid., 174.

²⁷Katz, 7.

²⁸Ibid., 33.

CHAPTER 4

CHECHNYA

The 1994 Russian military action in the breakaway Chechen Republic is an example of a conventionally equipped force from a nation state combating an irregular force that utilized both conventional and insurgent tactics. Although examination of the Chechen conflict provides a superlative example of the use of armor in an urban environment, the material available on the subject is limited and the accuracy of Russian commander interviews and military reports is suspect. Acknowledging this restriction I will use material sanctioned by the U.S. Department of Defense (DoD) through academic studies and periodicals from U.S. military journals. These sources will provide the basis for a critical analysis of the initial Russian operations within the city of Grozny from December 1994 to February 1995, the results of that operation, lessons learned, the application of those lessons to subsequent operations in the city, and finally the strategic impact Chechen Operations had on Russian doctrine and armored vehicle design.

As the situation in the breakaway Chechen Republic degraded in the late fall of 1994, both the Russian Minister of Defense, General Pavel Grachev, and the Chechen leader, Djohar Dudaev, identified the capital city of Grozny as the center of gravity for success in the inevitable military campaign. By December 1994, after a limited enemy activity the decision to commit armored forces in the capital city was made and would prove to be a costly one for the Russian military.¹

The Russian Army of 1994 consisted primarily of motorized rifle battalions with their focus remaining on fighting a conventional war in open terrain. Only elite units such

as the Russian Special Forces, the Spetsnaz, and airborne units had significant training for low intensity counter terrorism operations in an urban environment.²

The first Russian attack into the city of Grozny on New Year's Eve 1995 originated as a planned show of force to the separatist forces and remaining residents of the city's approximate population of 300,000. From the Russian perspective, the presence of Russian armored columns within the city would be all that was necessary to frighten the secessionist forces into capitulating. This operation occurred in the wake of sporadic small arms contact during the movement of the Motorized Rifle Divisions (MRDs) from the Russian border to assembly areas outside of Grozny. This lack of intense contact from the Chechens further reinforced the Russian view that this operation would only require a simple movement into the heart of the Grozny. The New Year's Eve assault force consisted of the 19th MRD attacking from the west of the city, the 81st and 255th Motorized Rifle Regiments (MRR) attacked from the north and north east. The 129th MRR and 98th Airborne Division (VDD) paratroopers would also attack Grozny from the east. All units were to advance toward the center of the city, converging at the presidential palace.³

The initial assault resulted in a complete disaster for the Russian forces. Suffering high losses of men and equipment over the course of 48 hours served to demoralize the Russian force. The 19th MRD did not attack on time and did not advance into the city. The 129th MRR failed to link up with the 98th VDD and the two units conducted separate attacks. From the north, the 131st Motorized Rifle Brigade (MRB) with units from the 81st MRR led the advance into Grozny without support for adjacent units. Conceived as a coordinated assault by multiple brigades the attack was by a lone

mechanized brigade into a hostile city.⁴ Hastily assembled units within these formations, including individual vehicle crews that were thrown together just prior to the attack, added to the chaos. Personnel carriers began the attack with limited or no dismounted infantry due to personnel shortages. Units were also poorly briefed about the enemy situation and purpose. Some crews assumed they were conducting a humanitarian mission for Russian citizens; others were briefed that they would establish traffic control points within the city, anything but an attack into an urban environment. The misconception on the lethality of the mission explains why some vehicles began the attack into Grozny with unloaded machineguns or infantry squads asleep in personnel carriers.⁵ The cordon of the capital to be emplaced prior to the columns entering the city was never implemented. Russian units stalled while their commanders refused to advance due to the possibility of being ordered to kill fellow Russian citizens or because of outright cowardice.⁶ This stagnation led to false reports issued from some commanders in regards to actual locations, resulting in gaps being left in the cordon. The failure to completely surround the city allowed for insurgent personnel and material to flow unimpeded into and out of Grozny throughout the operation.⁷ Russian reconnaissance yielded virtually no intelligence on composition or locations of the opposition. Poor weather during the last week of December limited the use of rotary wing aircraft and attack aircraft which the Russians were relying on to provide close support and clear insurgents from roof tops and the upper floors of buildings. The Russians also failed to acknowledge the lessons from the previous month when insurgents armed with RPGs surrounded and decimated a loyalist Chechen tank column in Grozny.⁸ Russian intelligence continued to predict only small secessionist bands defending in the vicinity

of the presidential palace. The poor intelligence resulted in the Russian belief that they had attained the favorable 4:1 force ratio over the Chechens as recommended by Russian doctrine developed during urban operations of the Second World War.⁹ In reality, Chechen defenders probably equaled or outnumbered the 6,000 Russian attackers.¹⁰ The Chechen insurgents were well equipped, utilizing modern Russian equipment including a limited number of tanks, APCs, and artillery pieces. A large number of the insurgents were also former soldiers in the Soviet Army, proficient in small unit tactics as well as possessing an intimate knowledge of how the attacking Russians forces would fight and where vehicles were most vulnerable.¹¹

Contrary to Russian expectations, the Chechens did not defend from a centralized position around the presidential palace but rather arrayed their defense in three rings. The first defensive ring focused on the outskirts of Grozny, the second circle was oriented on the city's interior, and the center ring's defenses were located in and around the palace. The Chechens apparently prepared defensive positions for up to three months prior to the Russian attack. Understanding the Russian reliance on armored vehicles the Chechen insurgents sought to limit the Russian mechanized advantage by choosing to defend in the constrictive terrain of Grozny. The city engineers of Grozny were incorporated into this defensive planning, allowing the insurgents to divide the city into grids and assign areas of responsibility to unit commanders.¹² The Chechen defenders allowed the armored columns to enter the complex terrain of the urban environment before attacking, limiting the effect of the long range Russian weapon systems. Utilizing the three dimensional battlefield intrinsic to fighting in urban areas, Chechen insurgents operated in platoon and squad size teams, engaging the Russian armored and mechanized

formations from street level as well as from fortified basements and upper floors of buildings. The latter two were immune from Russian main gun fire due to the inability to depress or elevate the tank's main gun at the required angle to return fire.¹³

The Russian attack of 31 December 1994 was met with a coordinated defense controlled by a simple yet effective command and control plan consisting of insurgents with cell phones and hand held radios. The armored columns of the 131st MRB and 81st MRR stretched for over a mile as they entered the city. The 131st MRB was allowed to reach its objective of the train station before being attacked by insurgents hiding within the MRB's perimeter. The lead vehicles of the 18th MRR advanced into the very heart of the city before the Chechens initiated the ambush.¹⁴ Within Grozny's confines, the city streets negated the armored columns' advantage of range and maneuverability afforded by the armored vehicles and canalized the Russian formations, setting the conditions for annihilation. The Chechens also coordinated limited attacks outside the city, focusing on disrupting the ability of artillery units to provide fire support for the attack.¹⁵

To defeat the Russian armor threat, Chechen defenders organized anti armor kill teams consisting of up to 10 fighters. Each kill team was divided into two sections, the first consisting of a dedicated sniper and machine gun equipped section which was responsible for suppressing the supporting Russian infantry and causing the armored vehicle crews to fight from a closed hatch, degrading their situational awareness. The machine gun and sniper team would fight from positions in upper stories and roof tops of buildings which were out of tank cannon engagement ability. This suppression allowed the anti armor section to occupy firing positions on the ground level or preferably in the basement of a building.¹⁶ Once in position the anti armor section would work in concert

with other anti armor teams to volley fire RPG-7s or RPG-18s at a single vehicle while ammo bearers ferried rounds to firing positions. Multiple shots fired at the flank and rear of a Russian armored vehicle would ensure a kill. Engaging vehicles from close proximity and from multiple locations overwhelmed Russian gunners, preventing their effective engagement of the kill teams. Using these anti-armor kill teams, insurgents rapidly paralyzed the Russian armor formations by identifying weak points and destroying lead and trail vehicles, stalling the column in the kill zone which facilitated further destruction. Insurgents were able to attack Russian columns in what could best be described as “hugging”¹⁷ or an attack that moved with the progress of the column, engaging the force at extremely close range to prevent the Russians from using their artillery and leaving them vulnerable without supporting dismounted infantry. A mobile attack also prevented the Russians from fixing the kill-teams with direct fire as would have been possible in a fixed site ambush. Russian elements remained in column formation after they were engaged, rather than maneuvering once contact was initiated, further contributing to their losses. This failure to maneuver allowed the insurgents to easily volley fire antitank systems, systematically destroying the remaining tanks and APC’s.¹⁸ Although suffering heavy losses, survivors from the 81st MRR managed to fight a retrograde to the outskirts of Grozny once they recovered from the initial attack. The 131st MRB defending at the train station, however, was not as fortunate. The 503rd Motor Rifle Battalion from this brigade attempted a rescue only to be beaten back by intense Chechen fire. After 48 hours of fighting and with the defensive position in the train station on fire, survivors under command of Colonel Savin attempted to fight their way out of the city, but were ambushed again. The insurgent ambush killed the colonel

and most of his men. Small groups of 131st MRB soldiers who avoided capture made it out of the city and to friendly lines.¹⁹ Due to failure of all Russian units to attack simultaneously according to plan, the Chechen defenders were able to focus their efforts on the lone brigade in the north. The 131st MRB and 81st MRR lost 20 of 26 tanks and 102 of 120 APC's in a 48 hour period, rendering the units combat ineffective.²⁰

The Russian units suffered from poor training, communications, and lack of unit cohesion. Failure to fight as a combined arms force with the piecemeal committal of units facilitated the Russian failure. The loss of synchronization of attacking forces as evident from the hasty planning and inaccurate reporting, compounded by a lack of air ground integration, contributed to fratricide incidents from air assets as well as from ground forces. Russian night vision devices utilized during the operation were visible to the Chechen passive night vision systems, denying the Russians the advantage of operating at night.²¹

Despite their initial defeat, the Russian forces had reconsolidated and prepared to enter Grozny a second time by 7 January 1995. The leadership responsible for the failed New Year's attack was relieved and replaced by more competent officers who drew upon the Russian urban operations in Berlin during World War II as a base for their plan.²² Based on intelligence gained from the first assault, additional forces were brought in to attain a suitable force ratio to attack the Chechen insurgents. Units were also committed in their entirety rather than in piecemeal fashion, increasing their overall effectiveness in combat.²³ The Russian forces began the systematic clearing of the areas as they advanced towards Grozny's center rather than the rapid advance used in the initial assault. Close coordination between armor and infantry forces resulted in combined operations in which

the dismounted infantry would clear and hold buildings with armor support, reduced the numbers of casualties as compared to those witnessed on New Year's Eve. Units modified their vehicles by adding make shift stand-off armor constructed of framed wire mesh to defeat RPG rounds and provide the crew with added protection. During the methodical attack Russian infantry began seizing and fortifying key buildings from which to conduct counter ambush operations, targeting the Chechen kill teams.²⁴ Fighting as a combined arms team, armored vehicles provided dismounted infantry with obscuration from smoke screens and white phosphorus tank rounds. ZSU 23-4 and 2S6 tracked anti aircraft systems were incorporated in armored columns to engage the upper floors and basements which were previously unable to be suppressed due to limits in tank gun elevation and depression. The Russian forces also utilized anti tank guided missiles and army rotary wing aircraft to clear roof tops and dislodge RPG teams, further offsetting the limitation of tank and APC main guns.²⁵ A technique developed during the initial attack on Grozny was the establishment of a stronghold in key buildings. This was done effectively during the fight for the train station, although the unit was eventually destroyed. Withering anti tank fire and lack of support had caused the 131st to abandon its armored vehicles and establish a defense in the train station allowing the unit to fight on for another 24 hours before it was finally destroyed. Seizing, clearing, and then establishing a defensive point from a building of tactical importance is equivalent to retaining a piece of key terrain which provides the defender a marked tactical advantage. Utilizing these revised tactics, the Russians were able to seize the city of Grozny in a period of two months with reduced overall casualties. Although costly, the Russians

defeated the insurgency causing the Chechen resistance to displace to outlying towns where the hard lessons learned in the capital would continue to be employed.

In the aftermath of the initial failed attack on Grozny, General Grachev, the Russian minister of defense, ordered a detailed analysis of all destroyed vehicles to be conducted in order to determine the main cause of such high losses.²⁶ Aside from vulnerabilities in the top of the turret common to most armored vehicles, the study also concluded that T-72 and T-80 tanks had the tendency to catastrophically explode when the crew compartment was penetrated. The low angle at which the Chechen killer teams, who were located in street and basement positions, engaged Russian tanks aligned the penetration of the anti tank projectile with the ready round located in the tank's autoloader. The Russian 125mm tank round casing is constructed from a combustible material designed to be consumed when the round is fired. Rather than being secured in the ammunition holding honeycomb, this round was exposed and quickly ignited in turn igniting the tank's additional ammunition and fuel stores.²⁷ The unimpressive performance of the T-80 tank caused General-Lieutenant A. Galkin, the head of the Armor Directorate, to convince the Minister of Defense after the conflict to never again procure tanks with gas-turbine engines.²⁸

Since the First World War, tank design has been driven by innovations designed to destroy an enemy's tank or survive an encounter with enemy armor. Russia's failures in the Chechen campaign sparked a wave of innovation in Russian tank and APC design driven by their experience fighting a well armed insurgency in a complex urban environment. The KONTAKT-5 reactive armor systems became standard on all tanks and most APCs. A cage of slat armor to defeat shaped charge weapons like the RPG was

designed and fielded for the T-72 increased survivability.²⁹ Due to the new requirement that tanks must be able to operate for a period of at least eight hours without refueling, the Russians selected a diesel engine for the T-90 tank. The proliferation of unguided and guided anti tank missiles systems spurred research and development in detection as well as defense systems that can identify and destroy launched missiles before they can damage the tank.³⁰ The experience with catastrophic loss in the T-72 and T-80 series of vehicles has caused Russian tank designers to rethink the auto loader and ammunition storage design. These innovations and adaptation for increased survivability were apparent in the prototype Black Eagle MBT which possessed both a redesigned auto loader and ammunition storage in a compartment separated from the crew. The new ammunition arrangement is designed with blowout panels similar to the U.S. M-1 Abrams intended to vent the explosion outward, preserving the crew and the structural integrity of the tank. The largest change that was brought on by losses in Chechnya was the development of the Armored Transporter Tracked (BTR-T) armored personnel carrier. The standard *Boyevaya Mashina Pekhot* (BMP) and *Bronetransportyor* (BTR) series of armored personnel carriers preformed well and possessed substantial armor protection in the front glacis and turret, areas critical when the front of the vehicle was oriented towards the enemy. However, when the enemy was able to use an urban area to strike from above flank and rear, the armor proved wholly inadequate. To provide greater survivability to the crew and dismounted infantry the Russians followed the Israeli model of enhanced vehicle survivability. Using the hull of a T-55 MBT, the Russian designers adapted a crew compartment to carry a squad of eight soldiers and a crew of three. The armament includes a variety of crew served weapons, 30mm cannon and anti tank guided

missiles. The only shortfall in this design is that due to the vehicle's engine being located in the rear, crew doors had to be located on the top of the hull. The positioning of the doors on top prevents the infantry squad from dismounting in safety behind the vehicle and exposes them to enemy fire for a brief amount of time.³¹

Despite the lessons learned by the Russians in the first Chechen War, the Ministry of Defense and government determined that it was too costly to conduct further mechanized operations in urban areas. However, the second assault on Grozny demonstrated that when appropriately task organized with dismounted infantry, rotary wing support, and artillery, an armored force was fully capable of defeating an insurgent threat within an urban environment. The slow methodical attack, clearing and retaining terrain as the formation advances, maximizes the lethality and survivability inherent of a tank while protecting its vulnerabilities. Instead of further refining these tactics, the Russian strategy shifted from building on the success of the second attack on Grozny in 1995 to a policy resembling a siege during later attacks on Grozny. Armored vehicles would be committed as a last resort in future conflicts. Reliance on concentrated artillery and aerial bombardment to inflict destruction on a massive scale forcing the insurgents to displace or capitulate would become the preferred method of urban combat.

¹Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons From Urban Combat* (Santa Monica, CA: Rand Publishing Inc., 2001), 9.

²Ibid., 8.

³Ibid., 13.

⁴Ibid.

⁵Ibid., 14.

⁶Timothy L. Thomas, "The Caucasus Conflict and Russian Armed Forces Confront Chechnya II: The Battle for Grozny, 1-26 January 1995," *The Journal of Slavic Studies* 10, no. 1 (March 1997): 53.

⁷Oliker, 10.

⁸Ibid., 12.

⁹Ibid., 6.

¹⁰Ibid., 13.

¹¹Ibid., 17.

¹²Ibid., 18.

¹³Ibid.

¹⁴BBC Europe, "The First Bloody Battle," <http://news.bbc.co.uk/2/hi/europe/482323.stm>. (accessed 10 December 2011).

¹⁵Adam Geibl, "Caucasus Nightmare: Red Dawn in Chechnya: A Campaign Chronicle," *Armor Magazine* (March-April 1995): 13.

¹⁶Oliker, 10.

¹⁷Ibid., 18.

¹⁸Ibid., 19.

¹⁹BBC Europe.

²⁰Thomas, 52.

²¹Oliker, 16.

²²Ibid., 6.

²³Ibid., 23.

²⁴Lester Grau, "Russian Manufactured Armored Vehicle Vulnerability in Urban Combat: The Chechnya experience," *Red Star Thrust OPFOR Publication*, <http://fmso.leavenworth.army.mil/documents/rusav/rusav.htm> (accessed 10 December 2011).

²⁵Ibid., 24.

²⁶James M. Warford, "Cold War Armor after Chechnya: An Assessment of the Russian T-80," *Armor Magazine* (November-December 1995): 18.

²⁷Ibid.

²⁸Ibid., 19.

²⁹Ibid.

³⁰Ibid.

³¹Ibid.

CHAPTER 5

IRAQ

The U.S. Army's use of armor in Iraq has been a constant since the 2003 invasion. Initially, the M1 Abrams tank and M2 Bradley Infantry fighting vehicle were in the limelight of the shock and awe invasion. A transition occurred between the late March 2003, conventional fight in the expanses of the Iraqi desert and the COIN fight that followed the collapse of the regime in May of that same year. The event that effected this transition was the decision to no longer use armor to cordon the city of Baghdad, but rather commit the armored force to combat operations within the city. On the morning of 5 April 2003 Task Force Rogue, 1st Battalion, 64th Armor Regiment, consisting of M1 Abrams tanks, M2 Bradley's, and M113s entered the city of Baghdad on Highway 8 to conduct a non-conventional armored reconnaissance of the city. As the first U.S. troops to enter the complex urban confines of Baghdad, little information existed on the enemy situation inside the city, what was known whether or not the city served as a stronghold for the Saddam regime both physically and ideologically. An armored thrust through the city's heart would not only serve to answer vital gaps in intelligence, but also strike a blow against the enemy's morale. The Iraqi resolve remained intact despite over two weeks of air and artillery strikes which failed to compel the regime to capitulate requiring this armored incursion. In a bold decision, U.S. commanders decided to send a tank heavy Task Force due to its firepower capabilities and the psychological effect it would have on the city's defenders. The selection of an armor unit resulted also due to it being the only type of unit that possessed the capability to get in and survive the fight out of the city. Although similar to the tactics used by the Russians in Chechnya, the U.S. Task

Force contained tanks and 25mm cannon equipped infantry fighting vehicles carrying dismounted infantrymen mitigated the short falls of main gun elevation and depression limits.

The armored force entered the city in a column formation stretching over a mile in length encountering a mix of Special Republican Guard as well as irregular Fedayeen Saddam. The defenders were equipped with a myriad of weapons ranging from T-72 tanks and BMP III APCs to irregular units equipped with RPGs and small arms. The three hour battle resulted in an estimated 200 plus enemy combatants killed and numerous technical and republican guard armored vehicles destroyed. The armored raid also demonstrated to the city's inhabitants the futility of the regime's defense, something air and artillery attacks could not accomplish. This success was not without cost as one tank commander, Staff Sergeant Booker, was killed and three soldiers were wounded by Iraqi fire. One M1 tank was also immobilized mid way through the city; volley fired RPG rounds ignited a fire on the vehicle which could not be extinguished, resulting in it being abandoned and later recovered by U.S. forces.¹

The thunder run attacks on Baghdad by 1-64 Armor on the 5 and 7 April capitalized on the shock value of the tank breaking the regime's will to fight. These attacks ended the high intensity combat phase of operations in Iraq. The capability of armor especially within urban confines was demonstrated without question; however, as the conventional fight transitioned into the long duration COIN and stability low intensity operations, the focus became the population not the enemy. This shift in emphasis served to sideline armor on the whole, to the point where MTOE tank equipped units deployed to Iraq without any of their organic tanks. According to FM 3-24.2, *Counterinsurgency*

Operations, the U.S. Army COIN manual, to provide security to the population the force needs to be in and amongst the population.² This implies the force should be dismounted and interacts freely with the population they are charged to protect, a task not easily accomplished from the hatch of a 70 ton tank. Despite the need for a lighter force, the nature of the Iraqi conflict included an insurgent force that was capable of employing coordinated attacks which utilized RPGs and Improvised Explosive Devices (IEDs), taking advantage of the complex terrain of the urban battlefield to overcome the technological advantage possessed by the U.S. forces. The absence of armor may be appropriate when a force is attempting to project a less confrontational or soft power image to the population. However, prudence in the presence of a capable enemy dictates that the ground commander should maintain the lethal ability provided by armor to counter that threat. In areas where a large number of insurgents were able to seize and fortify terrain, light forces faced a challenging and potentially bloody task of dislodging a determined enemy. During battles such as this, the survivability and lethality of the tank offset the insurgent advantage of complex and well defended terrain, allowing U.S. forces to defeat the enemy. Two examples of this successful employment of armored vehicles in the COIN fight were the 2005 and 2008 Sadr City uprisings and the 2005 battle for Fallujah. Although much research is dedicated to the study of these battles, this chapter will focus primarily on armor employment and the impact the tank had on winning the high intensity battle against the insurgency in Iraq.

Fallujah

The city of Fallujah became a base of insurgent activity immediately following the 2003 invasion. U.S. units assigned to secure the area achieved limited success and

failed to stamp out the insurgency. Both light infantry and armored cavalry units were assigned responsibility for the city from 2003 until 2004 with little or no progress made to root out the Sunni insurgent groups.³ The first battle for Fallujah occurred in the spring of 2004 as a response to the capture and murder of U.S. contractors in the city. Operation Vigilant Resolve began on 4 April 2004 despite the Marines' request to continue with population centric efforts to pacify the resistance.⁴ Vigilant Resolve sought to punish the insurgent group responsible for the attack and pacify the city. The operation pitted four Marine battalions against Sunni insurgents. The Marines cordoned the city and engaged in five days of heavy fighting with dismounted infantry supported by limited armor assets. The Marine assault successfully penetrated the insurgent defenses; however, due to political repercussions in the Iraqi Governing Council, the Marines were forced to withdraw. Following the U.S. withdrawal, the Marines transitioned responsibility for security of Fallujah to a hastily assembled Iraqi force. Although insurgent casualties were high, the remaining Sunni forces capitalized on this transition to improve their defenses and mass personnel and material for continued resistance.⁵

The second battle of Fallujah, named Operation Al Fajr or New Dawn began on 7 November 2005. By this point, the Iraqi Fallujah Brigade that was responsible for the area of operations had failed miserably in defeating the insurgency.⁶ The Sunni fighters, taking advantage of the summer and early fall to prepare for an inevitable second attack; stock piled weapons and ammunition as well as prepared defensive positions with interconnecting tunnels for covered movement between buildings. By November an estimated 3,000 insurgents occupied Fallujah, of which a quarter were believed to be hard core foreign fighters.⁷ To minimize collateral damage the coalition conducted an

intensive information operation warning the civilian population of an impending coalition attack. To facilitate this civilian migration out of the city, power was cut to Fallujah in the fall.⁸ During the planning of Operation New Dawn, the Marine command acknowledged that based on previous experience, without dedicated quantities of tanks for support in urban areas, friendly casualties would be significant.⁹ The identification of the need for heavy armor and the gap in resources for those assets forced the Marines to look to the Army for support. The Marines had previously been supported by 2nd Squadron, 7th Cavalry Regiment, (2-7 Cavalry) when Shia militia forces in the form of the Mehdi Army seized portions of Najaff.¹⁰ Due to this previous relationship, 2-7 Cavalry was assigned to provide support as was 2nd Battalion, 2nd Infantry Regiment (2-2 Infantry), with units from the 2nd Brigade Combat team of the 1st Cavalry Division tasked to fill the remaining Marine request for support. In total the Army provided 28 M1A2 tanks and 46 M2 infantry fighting vehicles.¹¹ The assigned Army units also provided engineer assets such as the M-58 Mine Clearing Line Charge (MICLIC) that would prove to be more than capable of pre-detonating IEDs emplaced along the narrow city streets.¹²

The operation began with the cordon of the city preventing the escape or resupply of the insurgent defenders. Four Marine battalions and two Army battalions assaulted the city while the 2nd Brigade combat team of the 1st Cavalry Division secured the logistic lines and cordoned the south eastern side of the city with their Stryker combat vehicles and mechanized infantry.¹³ The attack was conducted with all six battalions clearing the city from north to south.¹⁴ Multiple breach points were established in the north of the city, with the intent of penetrating the enemy defenses and seizing key terrain believed to be insurgent assembly areas within the city. The Marine planners knew the enemy to be

highly mobile and loosely organized, operating in small units which further facilitated their independent action. The enemy's tactics would necessitate the joint attack occurring across multiple points with a significant sized force of mobile combat formations fighting in multiple areas throughout the city to catch the insurgents off balance. The plan would force the insurgents to disperse and focus on multiple American attacks rather than retaining the ability to mass their forces against a single penetration. 2-7 Cavalry and 2-2 Infantry led the assault with their armor and mechanized vehicles, followed by the Marine battalions.¹⁵ The rationale was that the initial penetrations made into the city by the armored force would pierce the enemy defenses creating an opening in the enemy positions from which the Marines could conduct the follow on operation of deliberately clearing the city with light infantry battalions.¹⁶ The period leading up to the attack provided time for the Marines to gather accurate intelligence in regards to enemy defensive positions, as well as producing refined satellite imagery. These efforts not only facilitated maneuver and coordination between units in the city, but also allowed for effective targeting of known insurgent positions by CAS and artillery. The ability to identify and destroy a building that contained a strong point prevented ground forces from having to root out a determined foe.¹⁷ The breaches through the railroad tracks on the northern edge of Fallujah met with varying degrees of success. The operation occurred primarily under the cover of darkness which afforded the most protection to the engineers conducting the breach, and allowed the Abrams and Bradleys to exploit the advantage afforded by their thermal sights.

The armor quickly breached the railroad tracks and enemy defenses on the northern periphery of the city. The advance employed armor in the lead supported by

dismounted infantry in an effective mutually supportive combined arms operation. Armored vehicles operated in teams of two, providing over watch and support to their wing-tank while shielding the dismounted infantry from frontal fire. The armor forces quickly identified and destroyed all crew served weapons positions and Vehicle Borne IEDs (VBIEDs) encountered. The dismounted infantry working, in concert with the armor, provided protection by preventing the insurgents from repositioning to attack the vulnerable rear or sides of the tanks. The dismounted infantry were also successful in identifying and passing targets for the tanks to destroy with their main guns.¹⁸ The tanks and infantry fighting vehicles also provided rapid breaching and entry capability to the supporting infantry by driving into a building to create a new opening for the infantry. This technique enabled the dismounted infantry to avoid IEDs placed in existing doorways. Lastly, to mitigate the threat from insurgents or snipers firing down on the advancing force whose main guns could not elevate high enough to engage them, tanks and infantry fighting vehicles in the rear of the column were tasked with the responsibility of covering the upper floors and roof tops to destroy the threat.

The 2-2 Infantry outpaced units from 1-3 Marine Regimental Combat Team (RCT) who were unaccustomed to working with the heavy armor and quickly became bogged down. The Marines' lack of training and practice in the conduct of a combined arms breach led to initial delays and eventually resulted in the Marine's using the penetration previously established by 2-2 Infantry in the east.¹⁹ The 2-2 Infantry had to conduct a tactical pause to avoid creating a seam between the units, a seam which could potentially be exploited by the insurgents to cut off American forces within the city. During this pause, insurgents repositioned to the west, escaping 2-2 Infantry and

exploiting the Marines' slow progress. The 1-8 Marines and 2-2 infantry had also stalled due to heavy resistance encountered a few blocks south of the breach. To counter this, Lieutenant Colonel Pete Newell, the battalion commander of 2-2 Infantry, ordered one of his armor companies to conduct a passage of lines with the Marines and regain the stalled initiative in 1-8 Marine Battalion's sector of operations.²⁰ Army mechanized forces changed direction, attacking west to seize key terrain then changed direction a second time, attacking south of Highway 10 to set the conditions for the Marines to completely clear the city of insurgents after conducting a security handover with the Iraqi forces north of Highway 10.²¹ The enemy main line of defense was situated in the south of the city as the insurgents believed the U.S. attack would come from the south. As 2-7 Cavalry and 2-2 Infantry resumed their attack they rapidly advanced through the rear of the insurgent positions. The speed and lethality of the armored force trapped the insurgents between the advancing tanks and fighting vehicles and the 1st Cavalry Brigade blocking to the south. The armored force succeeded in fracturing the insurgents' defense, creating isolated pockets of fighters which the Marines then destroyed.²² At the conclusion of the attack it was evident that the armored force proved its value in achieving rapid penetration of the enemy defense and in the subsequent destruction of the insurgency in Fallujah.

In reviewing the capabilities of the armor force in Fallujah, both 2-2 Infantry and 2-7 Cavalry used field expedient methods to facilitate operations. This was exemplified by the ability of units to breach barricades established throughout the city. The 2-2 Infantry made effective use of the M88 armored recovery vehicle as a breaching asset to reduce the Hercules Engineering Solutions Consortium (HESCO) and T-wall barriers

erected by the insurgents.²³ The battalion's tanks also leveraged their main guns in a limited breaching role to reduce obstacles. By firing Armor-piercing Fin stabilized discarding sabot (APFSDS) rounds to crack concrete barriers followed by High Explosive Anti Tank (HEAT) rounds to clear the debris, tanks were able to reduce the barriers to a point where the vehicles could drive over them. The shock factor the tanks brought to the battlefield cannot be overstated. Tank commanders reported that the presence of the armored vehicles on the city streets caused insurgents to abandon their positions in an attempt to reposition or flee. The armored force effectively used fire support to exploit the situation, placing rounds on the fleeing Sunni fighters to trap them between the advancing tanks and exploding artillery.²⁴ The coordination of fire support and CAS proved critical to the U.S. success during Operation New Dawn. Fire support officers and observers were vital in adjusting fires and preventing fratricide between the adjacent units who were advancing at different tempos and consisting of a variety of communications equipment from the Army, Marines and Iraqi forces.²⁵ Lighter reconnaissance and surveillance vehicles emplaced a cordon that enabled the forces to maintain standoff from insurgent RPGs while continuing to use their Long-Range Advance Scout Surveillance System (LRAS) optics to track and call for fire on groups of insurgents within the confines of the city.²⁶ The M1026 120mm mortar carriers, organic to the mechanized units, were effectively employed to quickly eradicate insurgents within buildings. A direct hit from the mortar would cause the uppermost floor of a building to collapse on to the floor below.²⁷

Several key issues were identified at the conclusion of Operation New Dawn. One such issue was the absolute need for armored ambulances to conduct Casualty Evacuation

(CASEVAC) in an urban environment, especially in an environment with a high density of IEDs. This situation required a vehicle possessing a degree of survivability that would prevent further casualties from being incurred. Light units do not have these organic assets and the Marines were hesitant to use their AAVP7A1 (Assault Amphibian Vehicle Personnel) due to its previous poor performance against RPGs and large caliber machine guns.²⁸ The incorporation of M113 variants or additional M2 Bradleys for the sole purpose of CASEVAC or logistic resupply would have been beneficial until the security situation in Fallujah improved. Communications are vital to coordinate efforts and in the prevention of fratricide especially in an urban environment. Army, Marine, and Iraqi forces encountered severe problems when they attempted to communicate. This became evident at the squad level where the light dismounted force was afraid of the tank firing or backing over the infantry, therefore the dismounted infantrymen kept a distance from the vehicle. The result was armor crew and infantry attempting to communicate by voice over the engine noise and the sounds of the battle. Relationships between dismounted infantry and armor who had trained together would have solved this issue as would improve radio communications or the existence of a field phone on the rear of the tank to allow the infantry and tank crew to communicate without exposing either of them to enemy fire.²⁹

The employment of armor also varied between the Army and Marines. Due to the numerical abundance of tanks and Bradleys, Army units down to squad size fought with attached armored vehicles during clearing operations. The Marines positioned their tanks to the rear of the clearing operation, requiring them to be called forward when needed. The issues stemming from a lack of organic armor surfaced during the Al Fajar AAR.

Captain R.J. Bodisch of C Company, 2nd Tank Battalion, relayed the frustration of 14 M1s of a Marine tank company supporting three separate Marine battalions. Continuous operations, logistic support over a large battle space and the inability to mass more than a single tank when committed in such a piecemeal fashion were cited as detriments to the employment of Marine armor in Fallujah.³⁰

Lieutenant Colonel James Rainey, the commander of 2-7 Cavalry, commented that on conclusion of the operation, the task organization of heavy tank, Bradley infantry fighting vehicles and dismounted infantry supported by artillery and CAS allowed for the capture of key terrain and the destruction of the insurgent forces more quickly and with less casualties than if a dismounted force was employed.³¹

The success of the armor and light infantry fight in Fallujah served to further dispel the myths about the use of armor in urban areas. Despite friction experienced in the joint Army-Marine force, the operation succeeded in rapidly defeating an entrenched insurgent force in an urban strong hold. Although casualties were high during the nine day battle, without the protection and firepower afforded by the tank and Bradley forces they would have most certainly been higher.

Sadr City

The 2008 Sadr City uprising saw extensive use of armor to combat the insurgency in northern Baghdad. The four years that passed between operations in Fallujah and actions in Sadr City witnessed modifications to the M1 Abrams tank, especially the introduction of the tank urban survival kit (TUSK). This kit was designed based on feedback and lessons learned from armor usage in Operation Iraqi Freedom. This kit provided a remotely fired .50 caliber machine gun, allowing the tank commander to fire

accurately from the closed hatch. Additional modifications to include gun shields to protect the loader and tank commander as well as the addition of a thermal viewer for the loader provided additional visibility and security for the crew. To account for the vulnerabilities in flank and rear armor, reactive armor blocks have been added to the side skirts and slat armor now provides protection against RPGs for the rear of the vehicle. Lastly, a field phone mounted on the rear of the tank and connected to the crew intercom system allowed dismounted soldiers to communicate directly with the crew. These modifications were designed to be installed by the unit's organic maintenance personnel, negating the loss of combat power by sending the tank back to a depot to receive the upgrades.³² Taking a cue from the Israeli Merkava tank, a second precision .50 caliber machine gun became available. This machine gun was linked or slaved to the tank's main gun as well as linked to the gunner's optics. This arrangement served to minimize collateral damage previously associated with an area effect weapon and instead replaces it with the precision accuracy of a sniper rifle.³³

Outfitted with the TUSK system, armor of the 4th U.S. Infantry Division stood ready to respond to the increase in violence north of Baghdad. As part of the Baghdad security plan, Sadr City became a key neighborhood for military planning as it harbored Shia insurgent activity. Fighters from Jaish al-Mahdi (JAM), a pro-Sadr militia, conducted indirect fire, direct fire, and IED attacks from Sadr City. Using Sadr City's proximity to the green zone and other important governmental facilities in the heart of Baghdad, insurgents began firing multiple rockets and mortars from the sanctuary provided by the city. In reaction to the increased attacks, the Iraqi prime minister al-Maliki ordered Iraqi forces with U.S. assistance to stop the attacks by defeating the pro

Sadr militia.³⁴ Sadr city consisted of four urban areas with one of the largest public markets in Baghdad occupying 35 square miles and containing a dense population estimated to be approximately 2.4 million people. Unlike Fallujah, the population could not be evacuated prior to the start of operations. Care had to be taken to limit collateral damage and prevent civilian casualties.³⁵ The proximity to governmental targets as well as being situated on main coalition routes provided a multitude of targets for the militia. Sadr City was located along a main insurgent line of communication for material support from Iran.

The Coalition plan of attack ordered the 1st Battalion, 2nd Stryker Regiment, to secure the rocket and mortar firing points within Sadr City, allowing the 1st Battalion, 68th Armor Regiment, to crush the militia uprising. Once conditions were set, 15 foot tall by 7 feet wide concrete T- wall sections were to be emplaced, creating a wall to isolate the insurgents from the remainder of the population. Within the first week losses to the Strykers were heavy. Militia forces using RPGs and IEDs destroyed six Strykers that were equipped with the RPG defeating slat armor.³⁶ As a result of the increased enemy threat, operations in vicinity of Sadr City were reinforced with tanks and Bradleys from the 1st Battalion, 68th Armor Regiment. This unit was equipped with four companies containing both M1A2 SEP Tanks and M2 Bradley fighting vehicles rather than the armor or infantry pure units used during the 2003 invasion. The significance of the cross attachment of armor and infantry ensured the established relationships and familiarity of the tank and infantry components for mechanized operations like those undertaken in Baghdad.

The armor again proved survivable against RPGs and IEDs, able to absorb multiple hits and return lethal fire. Although the mechanized force controlled the main Route Gold, the insurgent rocket teams retained considerable freedom of maneuver by utilizing a sprawling network of alleys impassable to anything larger than a civilian automobile. The Iraqi security forces that arrived on 5 April bore the brunt of the insurgent attacks. In order to deny the Sadr militia the ability to attack Route Gold, the U.S. commander directed a barrier wall be constructed, which once completed, would isolate the insurgents from the route as well as from the market area. The Abrams and Bradleys provided site security for the construction efforts.³⁷ By fulfilling the security role, the armored force negated the weakness of the lack of mobility in the narrow confines of the Sadr City alleys and capitalized on their superior optics and fire power to deal with insurgent attacks on the barrier construction. As the construction began, the wall served as the focal point of the Sadr Militia attacks. During the six weeks of the barrier wall construction, 1st Battalion, 68th Armor Regiment, fired 818 rounds for the 120mm main gun and 12,091 25mm chain gun rounds from the M2 Bradleys. These rounds not only engaged insurgents but predetonated IEDs that were discovered. Armored vehicles worked closely with mechanized, Stryker, host nation dismounted infantry, and special operations sniper teams. The tanks continued to face and defeat the insurgent threat in Sadr City, attriting the enemy and preventing the delay in constructing the barrier wall. These operations affected the enemy to such an extent that on 12 May, Al Sadr, the figure head of the Sadr Militia, declared a cease fire ending the battle.

At the conclusion of the battle, an estimated 700 Sadr Militia fighters had been killed and the population, especially in the critical market area, had been isolated from

the insurgent threat. The militia's ability to fire rockets at the government buildings had been drastically reduced, bolstering the public's perception of legitimacy of the Iraqi government. The U.S. forces confirmed that tanks were vital to the success of the operation. The combination of precision fires and survivability of the M1s and M2s proved to be a decisive advantage over the attacking militias.

Operations in Fallujah and Sadr City represent two current and unique approaches in the utilization of armor and infantry fighting vehicles in complex urban terrain against an equally complex insurgent enemy. As demonstrated in Fallujah, the tank is more than capable of smashing through an enemy's defense and annihilating resistance through quick penetrations into enemy held terrain. The shock of a seemingly impenetrable vehicle destroying positions at close range had a tremendous impact on insurgents. When limiting collateral damage is not a priority and a significant quantity of infantry are available to provide security and conduct clearing operations, the tank is an extremely powerful asset. During security operations when the destruction of civilian property or the errant killing of civilians is a prime concern the tank has proven equally capable. This is even more the case due to the introduction of specifically designed anti-personnel rounds for the 120mm tank gun. Purpose built rounds allow the tank commander to match his ammunition to the threat, limiting collateral damage previously associated with HEAT or MPAT rounds. The tank and infantry fighting vehicles demonstrated their survivability and precision while defeating the insurgents in Sadr City.

Either in the form of a sledge hammers or scalpel, the tank has earned its place in the COIN fight in Iraq. Through proper employment with combined armor and infantry operations, and utilizing emerging technologies to increase its survivability and lethality,

the tank has proven to be a capable asset for the ground commander. Although not particularly suited for the softer side of population centric COIN operations, the ability of the commander to call the armor forward to counter an escalation in insurgent efforts is paramount and should not be overlooked or marginalized.

¹MAJ Doug Baker, personal experience while assigned as the A Company (Team Wildbunch) Executive Officer, 1st Battalion, 64th Armor Regiment, during the 2003 Invasion of Iraq.

²Headquarters, Department of the Army, Field Manual (FM) 3-24, *Counterinsurgency Operations* (Washington, DC: U.S. Army, 2010), 3-2.

³Kendal D. Gott, ed., *Eyewitness to War Vol I, The US Army in Operation Al Fajr: An Oral History* (Ft. Leavenworth, KS: Combat Studies Institute Press, 2005), 5.

⁴Vincent L. Foulk, *The Battle for Fallujah; Occupation, Resistance and Stalemate in the War in Iraq* (Jefferson, NC: McFarland and Company Publishers, 2007), 22.

⁵Gott, 5.

⁶Foulk, 45.

⁷Kendall D. Gott, *Breaking the Mold; Tanks in the Cities* (Ft. Leavenworth, KS: Combat Studies Institute Press, 2007), 98.

⁸Gott, 6.

⁹Matt M. Matthews, “Operation AL FAJR: A Study in Army and Marine Corps Joint Operations, Global War on Terrorism,” Occasional Paper 20 (Ft. Leavenworth, KS: Combat Studies Institute Press, 2006), 10.

¹⁰Paul Roger, *Iraq and the War on Terror; Twelve Months of Insurgency 2004/2005* (London, England: I.B Tauris and Co., 2006), 47.

¹¹Matthews, 20.

¹²Ibid., 22.

¹³Gott, *Eyewitness to War*, 11.

¹⁴Gott, *Breaking the Mold*, 97.

¹⁵Ibid., 99.

¹⁶Ballard, 57.

¹⁷Matthews, 28.

¹⁸Ibid., 45.

¹⁹Ibid., 47.

²⁰Ibid., 54.

²¹Ballard, 64.

²²Ibid.

²³Matthews, 54.

²⁴Ibid.

²⁵Ibid., 56.

²⁶Ibid., 49.

²⁷Ibid., 69.

²⁸Ibid.

²⁹Ibid., 55.

³⁰CPT R. J. Bodisch, “Charlie Company, 2nd Tank Battalion, After Action Report, Operation Al Fajar,” 8 January 2005, <http://www.2ndbn5thmar.com/tisop/tirefs/charlieaar.htm> (accessed 20 February 2011).

³¹Matthews, 74.

³²Armor Site, “M1A2 Abrams/TUSK,” Fabio Prado, <http://www.fprado.com/armorsite/abrams.htm> (accessed 21 February 2011).

³³Armor Site, “Merkava IV,” Fabio Prado, <http://www.fprado.com/armorsite/abrams.htm>. (accessed 21 February 2011).

³⁴David E. Johnson, Wade M. Markel, and Brian Shannon, *The 2008 Battle of Sadr City* (Santa Monica CA: RAND Corporation, 2011), 4.

³⁵Ibid., 19.

³⁶Ibid., 8.

³⁷Ibid., 10.

CHAPTER 6

AFGHANISTAN

At first glance, Afghanistan would not be considered an ideal place to employ armor. Jagged mountains in the north and numerous valleys with canalized road networks limit maneuver, while agriculture and canals in the south impede cross country mobility and mire heavy vehicles. Despite these limiting factors, three nations used armored vehicles with varying degrees of success while engaged in combat operations in Afghanistan. The U.S. Marines, Canadian Forces, and the Soviet Army all experienced this. This chapter will analyze the Soviet use of armor during the 1979 through 1989 Soviet Afghan War, and the Canadian Forces operations in Kandahar province from 2006 through 2010. Through analysis of the operations conducted by these nations the author will identify the conditions in which armor vehicles were employed, the threat they encountered, and the degree to which they were successful at defeating opposition forces and accomplishing the mission.

The Soviet Union

When the Soviet Union invaded Afghanistan in 1979, it did so with a combined thrust of airborne forces seizing the capital of Kabul, and mechanized armored columns seizing key terrain and population centers along the sole Afghan highway known today as the ring route. These mechanized forces eventually linked up with the airborne forces.¹ Following the initial success of entry operations, Soviet forces fought large-scale battles with the Afghan resistance, inflicting high casualties while also generating nationwide opposition. The Soviets, realizing their inability to defeat the insurgents through large-

scale sweep operations, turned their attention towards denying the insurgents a support area or base of operations.² By the close of the first year of combat, the Mujahedeen understood that they could not prevail directly against Soviet technology and combined arms tactics. This realization marked a major shift in the insurgency from open armed resistance to guerrilla tactics.³ As the Soviets began to focus on the cities and the lines of communications that linked them, the insurgency gained traction by conducting hit and run attacks and ambushes. The Soviet Union utilized its armored forces primarily to provide convoy security, but this additional combat power also required resupply and logistical support to accomplish the security mission. This further increased the number of logistical convoys and forces dedicated to maintain security requirements on ground lines of communication. The additional convoy traffic and the threat of guerrilla attacks by the Mujahedeen absorbed large portions of Soviet combat power, taking that force away from traditional offensive operations.

Responding to these guerrilla tactics, the Soviet counter ambush tactics positioned infantry fighting vehicles and tanks throughout the convoy to react to the threat. Once the convoy became engaged, armored vehicles would move into the kill zone of the ambush and remain stationary, returning fire, to suppress the attackers. Although audacious, this tactic did little to defeat an enemy as skilled in the art of the ambush as the Mujahedeen. Had the Soviet armor and mechanized vehicles suppressed as well as maneuvered to attack their ambushers, the effectiveness as well as survivability would have been dramatically increased. RPG-7 rockets and Chinese manufactured recoilless rifles used by the Mujahedeen could penetrate Soviet armor, especially when volley fired against a single target. This aspect was intensified by the Soviet doctrinal practice of fighting

mounted and stationary on their combat vehicles, increasing their vulnerability to Mujahedeen ambushes.

Soviet motorized vehicle crews identified shortcomings with their vehicles early on. Crew fabricated cages were added to combat vehicles in order to defeat the captured RPG shaped charge warhead. Sand bags or containers filled with earth were strapped to the hull in an effort to increase armor protection, especially on the BTR family of vehicles. The attempts to reinforce the wheeled and tracked vehicles added additional weight and adversely affected the armored vehicles' performance.⁴ Command detonated mines, the predecessor to the IED, were used extensively by the Mujahedeen to defeat Soviet armor, a tactic with increased success due to the canalizing terrain and limited road networks. To counter the mine threat, the Soviets employed a turretless T-55 tank, referred to as a mine trawler by the infantry, or an armored personal carrier containing a dismounted mine detection squad. This squad relied heavily on mine probes and dogs to manually detect the nonmetallic mines commonly used in contested areas like the Panjesher Valley. The tedious manual route clearance techniques resulted in reduced operational tempo and an increased possibility of ambush for the slow moving convoy.⁵ The BMP series of fighting vehicles were not without shortcomings. Designed for a direct fire conflict in Europe, the lightly armored hull could be easily penetrated by mines. Also, the possibility of a catastrophic explosion due to 30mm ammunition chutes running beneath the passenger compartment and fuel stores being ignited from a mine penetration caused many dismounted squads to ride exposed on the top rear of the vehicles.

To provide security for ground lines of supply, the Soviets employed tanks in fixed site security operations or as perimeter defense at unit bases. In areas that lacked dominating terrain the Soviets undertook massive engineer operations to build man made hills up to 300 feet in height, providing positions from which to over watch movement routes. Fixed positions proved to be a weak point for the Soviets by ambushing routine resupply columns intended for the units in the over watch because the static positions served as easy targets for indirect fire or rocket attacks.

There were however, occasions where Soviet commanders made effective use of armor supported by dismounted Infantry to defeat Mujahedeen forces. The task of securing the ground lines of communications required the Soviets to conduct spoiling attacks into the Mujahedeen sanctuaries. These sanctuaries were normally villages within proximity to the critical routes or cities, often defended by insurgent emplaced mines as well as prepared defensive positions. The Soviet intent for these operations included attacking the sanctuary from one direction while maneuvering another element of the force to the rear to contain the insurgents facilitating their destruction. Due to the insurgency's population-based early warning network, the speed of the armor force was best suited for the attacking force while the airmobile infantry proved to be highly effective as the fixing or containing force.

A successful example of the use of armor to clear an insurgent sanctuary occurred in Helmand province of southwestern Afghanistan in May 1984. The clearing operation consisted of a dismounted airborne infantry battalion with two attached tank companies. The Soviets primarily relied on dismounted infantry to conduct such operations, using the tanks and armored personal carriers as security for the forces' movement into sector. On

this particular operation, the Soviet commander understood the Mujahedeen tactics of engaging the attacking force in established kill zones from extremely close range to impede the Soviet use of close attack aviation or artillery fire support. To deal with this threat, the commander, Lieutenant Colonel Romanov, led the assault with two armored columns secured by dismounted infantry. By using the tanks to rapidly clear lanes into the agricultural area, the Mujahedeen were caught off guard. This rapid penetration allowed the Soviets to capture caches of weapons and deny the insurgents' immediate use of the area as a sanctuary. Lieutenant Colonel Romanov's unconventional decision to lead with armored vehicles provided the survivability needed to absorb the reported 40 RPG's fired at the vehicles without sustaining causalities. The tanks and APCs also provided the dismounted clearing teams with immediate support with their main guns suppressing Mujahedeen positions with cannon fire. The operation proved that when paired with dismounted infantry, tanks, provided mobility and protection critical to defeating insurgent tactics even if the terrain was not considered tank capable.⁶

In some instances, the Mujahedeen used captured Soviet tanks to spearhead assaults on fortified base camps. The rudimentary design of Soviet vehicles allowed the captured tanks to be easily operated by the untrained insurgents. Captured tanks were used to destroy base camp guard towers as well as to physically breach the camp's perimeter defense, creating a mine and obstacle-free lane for the dismounted insurgent assault force to use. Research does not indicate that the Mujahedeen ever used captured tanks to directly counter Soviet armor however.

Although the Soviets enjoyed limited success with armored vehicles in Afghanistan, the overall tactical employment combined with the mountainous terrain

prevented those successes from being replicated on a scale above battalion. The Soviets continued to suffer heavy losses of vehicles due to ambushes and mine strikes until their withdrawal in 1989. Lack of adaptability from the Soviet units who were trained to fight in a European conventional fight to dealing with the Afghan insurgency manifested itself in high casualties. Lack of dismounted soldiers and the improper employment of mechanized and armored forces restricted Soviet military operations to major movement routes and urban centers rather than the enemy or his support network, the population.

Canada

Another example of the use of armor in Afghanistan is that of the Canadian forces who operated in the Helmand and Kandahar province from 2005 until 2011. Initially, the Canadian Ministry of Defense deployed mechanized infantry units equipped with the Coyote which is comparable to the U.S. LAV 25. This is a lightly armored wheeled vehicle equipped with a 25mm cannon, machine guns, and a thermal optics package. In addition to the Coyote, Canadian Forces also used multiple variants of the mine resistant armor protected vehicles such as the RG-31 Mine Resistant Ambush Protection Vehicle (MRAP) and the Bison. Although adequate for transportation duties and limited combat operations, these vehicles offered limited protection from RPGs and the large deep buried IEDs common to the Kandahar area. The coyote was employed effectively in support of dismounted infantry, as demonstrated during the 2006 Operation Mountain Thrust in the Arghandab river basin. Coyotes maneuvered under intense Taliban fire to relieve pinned down dismounted infantry.⁷ The light armor and multiple wheel design enjoyed relative freedom of movement cross country as well as mobility on improved road networks. However, the tight confines of villages and vineyards limited vehicle access in populated

areas. In agricultural areas, canals and irrigation ditches severely limited cross country mobility. Unfortunately, both were areas requiring the dismounted forces.⁸

Although Canadian units successfully disrupted insurgent lines of operations in southern Afghanistan, the Taliban fighters in the Kandahar area through 2006 displayed an increased resolve and capability. By using the complex terrain of grape vineyards and rural villages with interconnecting irrigation canals which facilitated enemy mobility to the detriment of Canadian mechanized infantry, the Taliban conducted conventional attacks using massed forces. Spectacular attacks like the bus bombing of a Kandahar City market in June 2006 served to discredit International Security Assistance Forces (ISAF) gains in security.⁹ Emboldened by the success of these attacks, the Taliban engaged the Royal Canadian Regiment in an attempt to retain the key terrain of the western approach into Kandahar City. In the districts of Panjwai and Zahri the Taliban fought from well prepared defensive positions, using IEDs to deny Canadian mobility and canalize infantry into established kill zones. Large-scale operations like the Canadian participation in Operation Medusa cleared insurgents from key areas only to witness those areas being reoccupied by Taliban fighters following the completion of the mission. The Canadian Battle Group Commander, Lieutenant Colonel Omer Lavoie, determined that in order to continue developmental efforts within Afghan security and government, he had to dislodge and defeat the insurgents. Lieutenant Colonel Lavoie also realized he needed additional assets to accomplish this task. During previous operations, civilian bulldozers were pressed into a support role, breaching the two foot thick earthen walls around vineyards and the multiple berms contained within, thereby allowing the dismounted infantry to maneuver against Taliban positions. In response to the insurgents' adaptation

of conventional tactics, Lieutenant Colonel Lavoie requested the deployment of armored assets to Southern Afghanistan. This armored package consisted of the equivalent of a U.S. tank company, roughly fifteen Leopard 1 C2 tanks, and a platoon of armored engineers. This force was deployed after an accelerated train-up within six weeks of the initial request. Units from Lord Strathcona's Horse (Royal Canadians), moved into sector by December 2006 in time to affect the spring fighting season.¹⁰

This mechanized force operated in the combined arms model, assigning tank platoons and sections with engineer support to infantry companies. The tank squadron did not act independently in any ISAF operations. The tank's ability to provide immediate direct fire support to the infantry was immediately realized. The Canadian Leopards first saw action on 19 December 2006 during operation Baaz Tsuka in the Maywand district. The combined arms team of infantry and armor partnered, with Afghan security forces, assaulted Taliban staging areas in order to disrupt their preparations for the spring fighting season.¹¹ Precision 120mm cannon fire directed against enemy positions from the tanks often negated the need for CAS. The accuracy of the cannon fire and survivability of the tank dispelled any early concerns held by the Canadian leadership in regards to collateral damage associated with the use of armored vehicles. The 50 ton weight of the tank proved it to be effective as a breaching tool, cutting a lane through earthen walls previously used by the insurgents to impede Canadian mobility. Marginal collateral damage did occur, specifically to the culverts and irrigation canals used by the rural population. Effective use of the Provincial Reconstruction Team (PRT) by the Canadian commanders to repair this tank inflicted damage served to retain popular

support of Canadian and Afghan operations while continuing to maximize the capabilities of the armored force.¹²

Electronic countermeasures employed by coalition forces resulted in the insurgency switching triggering mechanisms of their IEDs from radio controlled to pressure plate activated devices. An identified trend as the war progressed saw that Canadian forces were being attacked by IEDs while in transit to the objective as well as on the objective itself. Mine rollers and ploughs affixed to tanks were used to clear routes, predetonating or removing IEDs from the path being traveled. This tactic proved effective against Taliban emplaced IEDs as well as with old unmarked Soviet minefields, which were another common occurrence in the Kandahar Province.¹³ The use of tanks returned mobility to the Afghan battlefield, and regained the element of surprise by discarding the previous constraints of restricted terrain. The tank could cut a trail through walls or fields, allowing the LAV 25 equipped infantry flexibility in determining the best direction of advance, avoiding mines and direct fire kill zones.

The L55, 120mm main gun on the Canadian Leopards tank enjoyed a wider selection of ammunition than that available for the U.S. M256, 120mm gun. Canadian tank crews preferred the High Explosive Squash Head, or HESH round, which possessed the ability to penetrate a mud wall a meter thick, creating a five foot hole. The HESH round is designed as a general purpose munitions that creates a large diameter of spall on the rear surface of the target, making it effective against light armored vehicles and structures.¹⁴ Once created the hole could be used for a second shot, killing any insurgents on the far side of the obstacle or as a hasty breach for the accompanying dismounted infantry to gain entry and begin clearing operations.

Canadian armor proved equally effective when used as a QRF, again combined with both infantry and engineer assets to create a very capable combat team. In this form the QRF was used to bolster Afghan forces after an ambush or attack as well as providing support for other coalition partners. The 4,000 meter range of the main gun as well as the optics possessed by the leopard made the tank an effective augmentation to fixed site security when incorporated in the defense of combat outposts. Tanks effectively identified and engaged Taliban mortar teams or IED emplacers previously beyond reach of the LAV 25s.¹⁵

According to Major Robert McKenzie, who commanded a tank squadron as part of the 1st Battalion, Royal Canadian Regiment Battle Group, in the Panjwai District during the 2010 fighting season: “Overall, we provided many doctrinal armor effects, though not always in a doctrinal kinetic fashion.” Being able to deter hostile action by sheer presence was an effect the tank had on the insurgent force. The ability to disrupt Taliban activity without firing a shot directly aided the attempts to win over the population. Fear or the tangible representation of security prompted civilians to assist the Canadian forces. Regaining mobility in constricted terrain was also a hallmark of the combined arms team of armor, engineers and infantry. When used as a deception operation, the magnitude of armored forces maneuvering served to distract the Taliban from population centric missions, preventing interference. Despite all the capabilities associated with the armored force, the relatively small numbers of tanks in comparison to the whole force meant that not all units received the benefits of armor support.¹⁶

In April 2009, the U.S. 1st Squadron, 71st Cavalry, occupied Dand District in Kandahar Province under NATOTACON command of the Canadian Task Force

Kandahar. Lieutenant Colonel John Paganini, the squadron commander, identified an insurgent transit zone that utilized a line of hills running from Panjway to Kandahar City. The Taliban defended this area, known as Fish Mountain, with a protective belt of IEDs, capitalizing on the seam between unit boundaries and the restrictive terrain allowing them to maintain freedom of movement. To defeat the enemy, Lieutenant Colonel Paganini requested Canadian armor support, employing the attached tank platoon on the opposite side of the mountain. This position denied the Taliban exfiltration routes to the northwest acting as the anvil to the dismounted clearing forces hammer. During operations to seize enemy held terrain in the vicinity of Fish Mountain, the Canadian armor utilized its thermal optics to identify insurgent movement from vantage points previously untenable due to the IED threat, passing the information to the dismounted cavalrymen. Used as a demonstration of force, the mere presence of tanks in a enemy sanctuary disrupted Taliban attempts to flee the U.S. clearing operations on Fish Mountain. After refining some common procedures, the tank platoon enhanced the light cavalry squadron's capabilities, mitigating the IED and baited ambush threat through the ability to breach and engage targets at a distance.¹⁷

The successful Canadian use of armor in Afghanistan was not without difficulties. Operating in a decentralized manner despite being beneficial tactically, presented a major logistic requirement. The tank's consumption of ammunition and especially fuel increased the demand on an already stretched supply system. Limited maintenance personnel combined with the harsh environment and constant use resulted in numerous mechanical failures. Cultivated areas, culverts and canals presented numerous opportunities for tanks to become hopelessly mired, requiring the attached infantry to

provide security until recovery assets could be dispatched. Attaching tank sections or platoons to infantry companies with no previous relationships added to the friction experienced during operations.¹⁸

Having analyzed the recent conflicts in Afghanistan and the use of tanks by both the Soviets and the Canadians one fact becomes clear. Despite all of the tank's attributes, the use of an armored formation without supporting infantry is a recipe for failure. The canalizing terrain of Afghanistan combined with an asymmetric foe negates the lethal punch associated with the use of large armor formations. When faced with such a dilemma, leaders can, as the Soviets did, force conventional tactics in an unconventional fight with obvious results; or in the case of the Canadians, identify a tactical need, adapting and integrating forces in nonstandard ways to increase effectiveness. The possibility also exists that due to the successful use of tanks in Afghanistan, the Canadian Government has reconsidered phasing out the tank in favor of wheeled vehicle platform.¹⁹ This argument is supported by Canada's acquisition of the 100 Leopard 2A6M tanks from various European countries since 2007. The combined arms team paired the mobility and survivability of the tank with dismounted infantry security and engineer support. As the Canadian Army has demonstrated, effective operations can pair a tank with the provincial reconstruction team working to build capacity of local governance while presenting a tangible example of security and resolve. Leaders must remain open to the use of armored vehicles even in areas that traditionally have not been considered optimal tank terrain. Balancing the capabilities as well as the limitations of the tank allowed it to be used in an adaptive method to close with and destroy the enemy. When asked about the success of infantry operations supported by tanks in Afghanistan,

Major Mark Popov of the Canadian Army, who commanded an Armored Recce Squadron Combat Team in the Kandahar Province from October 2009 until May 2010 replied: “When a combined arms team assaults an objective and tanks are used to breach and get the infantry into the objective, no young infantry soldier wins the Cross of Valor for kicking in the door and leading the charge into a compound full of insurgents. On the other hand, more often than not, the same young infantry soldier will come back alive.”²⁰

Balancing the capabilities as well as the limitations of the tank allowed it to be used in an adaptive method to close with and destroy the enemy. The manner and numbers in which the tanks accomplish their task or provide the required support for the infantry to accomplish this task is dependent on an imaginative and adaptive commander.²¹

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²Davis Isby, *Russia’s War in Afghanistan* (London, England: Osprey Publishing, 1986), 7.

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⁵Vladislav Tamarov, *Afghanistan: A Russian Soldier’s Story* (Berkley, CA: Ten Speed Press, 1992), 76.

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⁸bid., 22.

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¹¹Ibid., 7.

¹²Ibid., 10.

¹³Ibid., 8.

¹⁴Israeli Military Industries, “M 156, HESH-T Cartridge,” <http://www.imi-israel.com> (accessed 30 March 2012).

¹⁵Cadieu, 9.

¹⁶MAJ Robert McKenzie, Regimental Second in Command, Lord Strathcona’s Horse, Canadian Army, interview by author via e-mail, 20 March 2012.

¹⁷LTC John M. Paganini, Director, COIN Center, Ft. Leavenworth, KS, interview by author via telephone, 20 May 2012.

¹⁸Cadieu, 15.

¹⁹Canadian Department of National Defense, “Canadian Tank Acquisitions,” <http://www.forces.gc.ca/site/pri/2/pro-pro/tank-eng.asp> (accessed 29 April 2012).

²⁰MAJ Mark A. Popov, G3 Operations, 2nd Canadian Mechanized Brigade Group, Canadian Army, interview by author via e-mail, 20 March 2012.

²¹Ibid.

CHAPTER 7

CONCLUSION

Is the tank an effective weapon when employed in the COIN fight? Case studies from the previous 60 years illustrate how conventionally equipped forces, possessing tanks and armored vehicles, used those vehicles while engaged in COIN operations. As demonstrated from the examples previously mentioned those nations begrudgingly committed their armor units, employing them with varying degrees of success. In all of the case studies visited, the threat took the form of an insurgency conducting an asymmetric fight against a superior force. One constant manifested by the insurgency in all the conflicts studied is that of the insurgent's ability to fight as guerillas and transition, when the situation permitted, to the use of mass and organized attacks, fighting in the conventional manner. In the case of the North Vietnamese Army and the Taliban, this transition to conventional tactics included the enemy use of armor vehicles. If the enemy possessed this conventional ability, why then should the conventional army not retain the ability to use its tanks? Through this exhaustive study, some facts are evident concerning the use of armor in COIN which transcends time and nation of origin.

The enduring facts that have emerged through the study of armor are that the combined arms team consisting of at least armor and infantry provides the commander on the ground with a lethal and highly capable force. The second fact is that the initiative is gained by commanders who seek the nonconventional employment of armor or those who seek to use the strengths of the tank despite the situation or terrain being described as restricted for armored maneuver. Units that are either task organized or that train with different branches of the combined arms team enjoy greater success with less friction as

compared to units who are task organized under fire for the first time. Lastly, units possessing a smaller more deployable armor force have a greater initial effect on the battlefield due to their ability to respond quickly denying the threat additional time to prepare.

The Combined Arms Team

As demonstrated by the Russians in both Chechnya and Afghanistan, the advantage of possessing technologically superior vehicles can be quickly diminished by the combination of faulty intelligence, a skilled enemy, and complex terrain. The Soviet Army learned this lesson all too well during its first armored attack into Grozny. The Chechen insurgents were able to freely exploit the weakness of armored vehicles to engage targets outside of the limits of the tanks' main armament. This was compounded by the lack of Russian dismounted infantry to provide rear and flank security as well as clear potential firing positions that would otherwise exploit the tanks' weaknesses. The failure to employ the combined arms team can also be found in the example of a light infantry force. This is demonstrated by the U.S.' actions in Somalia with Task Force Ranger and the light infantry QRF provided by the 10th Mountain Division. Although task organized with rotary wing aviation, the ground force found itself without a survivable combat vehicle from which to conduct operations. In the fluid environment where the asymmetric threat possesses the ability to fluctuate across extremely lethal capabilities, the combined arms team becomes a necessity. This maxim has been proven through analysis of the Canadian model in Afghanistan, as well as through U.S. operations in Vietnam and Iraq. Operating as a combined arms team, each branch mitigates the other's vulnerabilities while affording the ground commander the latitude to

tailor operations on an equally diverse scale of response. In the modern counterinsurgent fight as seen in Afghanistan, the threat relies heavily on sophisticated IEDs that have devastating effects on dismounted personnel. The combined arms team of tanks and engineers can regain the initiative in such an environment and mitigate the capabilities of the enemy's weapons. Relying on survivability provided by their vehicles, tanks with engineer support can deny the insurgents the use of IEDs by clearing paths for the infantry preventing casualties on the approach to the objective and restoring overall mobility of the force.

Armor in Restricted Terrain

As demonstrated through the analysis of previous conflicts, preconceived notions in regards to the ability of the terrain to support armored maneuver is often unfounded. In locations like Vietnam and Afghanistan which contained severely restricted natural terrain, or in the complex urban centers of Iraq and Chechnya, tanks enjoyed far greater success than originally predicted. Commanders who thought outside the confines of existing estimates of what mechanized forces could and could not accomplish reaped the benefits offered by the tank. That being said, terrain has and will continue to have a tremendous impact on the decision to use armored forces in future conflicts. Terrain can be either the impenetrable jungle of South Vietnam or the difficult human terrain witnessed during Operation Restore Hope in Somalia. In choosing to use armor, a commander must weigh the advantages with the risks associated with the tank. The proven ability of the tank to penetrate enemy sanctuaries and restore mobility to ground forces contrasts with the collateral damage and the negative effects armor has on the civilian population. The lethality and survivability of the tank when operating in the

urban environment must be compared to the limitations of the inability to engage elevated or substreet level targets necessitating dismounted infantry support. The complications associated with resupplying the logistic intensive armored formations in restrictive terrain must also be considered as the Canadians and Soviets in Afghanistan both encountered. When viewed holistically, the armor force provides a commander with increased mobility, survivability, and lethality when needed in restricted terrain but, only if that commander takes into account armor's limitations and associated logistic challenges.

Task Organization

One tenet that is evident throughout every case study reviewed in this analysis is that a pure force consisting of only light infantry or heavy armor provides very little agility on the asymmetric battlefield. The success as demonstrated in Operation New Dawn in Iraq or Cedar Falls in Vietnam when a force is composed of multiple branches, as discussed under combined arms, it is able to conduct a multitude of diverse missions with successful results. The combined branches, each of which is designed to fulfill a needed capability or mitigate an identified vulnerability, will work in concert towards mission accomplishment. The efficiency at which this occurs is dependent on the relationships developed between individual units or their previous exposure to working with particular capabilities. As identified by the French in Indo China, support provided by an armored force which is too small will prevent habitual relationships from forming; it will also cause the armor to be piecemealed out, diluting its capabilities. Tanks work best when they can maneuver in a section of two or a platoon of four vehicles. A solitary tank will be able to provide minimal support to the unit it is assisting, becoming in effect

a mobile weapons carrier rather than a maneuver asset. The increased friction and decreased effectiveness apparent with infantry formations that have previously never worked with tanks manifested itself with the Canadians in Afghanistan, Russians in Chechnya, and the U.S. throughout the Vietnam conflict. This aspect is further compounded by working with armor from an international partner as the U.S. did in Somalia. The relationships and positive results of previous exposure are successfully demonstrated by the Marine and Army joint operations in Najaf and Fallujah. The best example of a well balanced force that capitalized on the previously discussed combined arms advantages is the U.S. ACR during the Vietnam conflict. By balancing a mechanized infantry force with capabilities of a smaller armor, artillery, engineer, and airmobile light infantry troop, a versatile force was created. This force excelled at the COIN fight through the addition of key enablers like military intelligence and civil affairs. The soldiers and leaders of the ACR possessed a familiarity with the capabilities and limitations associated with each component, fully leveraging the habitual relationships formed over time. The commander of the regiment possessed the ability to adjust the force to respond appropriately to the evolving threat as well as accomplish the population based mission associated with the pacification of an insurgency. The diversity of possible future conflicts the U.S. may become involved in requires the re-creation of such a versatile force in order to respond to the full spectrum of threats and missions.

Deployability

The tank's attributes that make it effective in combat such as armor for protection and a large main gun for lethality, also impede its ability to deploy. Weight, bulk, and logistics consumption are realities a tank will never be able to divorce itself from. These

realities also prevent the tank from being rapidly deployed in large quantities. The 50 to 70 ton weight of the tank makes it difficult to transport by air and costly as well as challenging to sustain in an immature theater of operations as most insurgencies have historically been. The use of armor represents duration and commitment as witnessed during the U.S. involvement in Vietnam. The U.S. government did not want to portray an escalation to the U.S. or Vietnamese populations and feared that the deployment of a tank fleet in country would convey just that. Nonstandard missions conducted by the tanks like jungle busting in Vietnam or entry operations through grape huts in Afghanistan take a toll on the maintenance of armored vehicles. This intensive maintenance requires an extensive and again costly logistics network to support the deployed armor formations. As demonstrated in Vietnam with the U.S. M551 Sheridan and in Afghanistan with the Soviet BMP-3, a smaller more transportable vehicle may not be able to operate as effectively as its heavier brethren, much less survive on the same battlefield. This is not to say that revisiting the armored gun system of the 1990s is not a worthy endeavor, only that heavy armor possesses unique, irreplaceable capabilities. Advances in future technologies may overcome some of the shortfalls with lighter vehicle designs. A larger variety of ammunition to include the emerging technology of smart munitions will also increase the versatility of current and future tanks. As previously discussed, a commander must weigh all the benefits and limitations associated with the deployment of armor in support of the asymmetric fight. In some instances, as with the Canadians in Kandahar or the U.S. Army in Mogadishu, there was no substitute for the mobility, survivability, and lethality found in the tank. This fact will become increasing important in future conflicts with the proliferation of more advanced and lethal weapons. As witnessed though the

collapse of regimes in 2011 like those of Egypt and Libya, weapons such as an anti-tank guided missiles will become available to a host of insurgent groups. As witnessed through the example of the MEF in Operation Restore Hope, deploying by sea, a company of tanks landed ashore initially then as the threat subsided, could be retained shipboard to respond to future contingencies. Attempts to create a more deployable platform to replace the capabilities of the tank with a lighter wheeled vehicle resulted in the same historical shortcomings as seen in Iraq with the introduction of the Stryker combat vehicle. Fulfilling a role as a medium combat vehicle with more deployable characteristics than a tank, the vehicle suffered in regards to protection of the crew, mobility, and outright firepower demonstrating that the capabilities of a tank cannot be replaced. When the threat level and capability of the insurgents increased in Sadr City, the M1 tank and M2 Bradley replaced the Stryker in providing over watch of the barrier construction mission primarily due to catastrophic losses of Strykers and the tracked vehicles ability to survive an RPG or IED strike.

In summary, having analyzed numerous conflicts where armor has been employed in the asymmetric fight, it has been demonstrated that when integrated as part of the combined arms team, the tank has performed exceptionally well. Armor has provided the ground commander the capabilities in which to defend his forces from the host of threats used by the insurgent as well as providing the armored fist that can be used to find and destroy the threat, denying insurgent forces previously enjoyed sanctuaries and returning friendly force mobility to the battlefield. Armor remains the combat arm of decision providing tremendous capabilities and advantages in the COIN fight providing that force be agilely maneuvered by imaginative combat commanders.

APPENDIX A

INTERVIEW WAIVERS

You have the right to choose whether or not you will participate in this oral history interview, and once you begin you may cease participating at any time without penalty. The anticipated risk to you in participating is negligible and no direct personal benefit has been offered for your participation. If you have questions about this research study, please contact the student at: douglas.f.baker@us.army.mil or Dr. Robert F. Baumann, Director of Graduate Degree Programs, at (913) 684-2742.

To: Director, Graduate Degree Programs
Room 4508, Lewis & Clark Center
U.S. Army Command and General Staff College

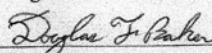
1. I, MAJ MARK POPOV, participated in an oral history interview conducted by MAJ DOUG BAKER, a graduate student in the Master of Military Art and Science
Degree Program, on the following date [s]: 20 MAR 2012 concerning the following topic: THE RELEVANCE OF ARMOR IN COUNTERINSURGENCY OPERATIONS.

2. I understand that the recording [s] and any transcript resulting from this oral history will belong to the U.S. Government to be used in any manner deemed in the best interests of the Command and General Staff College or the U.S. Army, in accordance with guidelines posted by the Director, Graduate Degree Programs and the Center for Military History. I also understand that subject to security classification restrictions I will be provided with a copy of the recording for my professional records. In addition, prior to the publication of any complete edited transcript of this oral history, I will be afforded an opportunity to verify its accuracy.

3. I hereby expressly and voluntarily relinquish all rights and interests in the recording [s] with the following caveat:

None Other: Paper accreditation be granted me for any direct or indirect quotes used.

I understand that my participation in this oral history interview is voluntary and I may stop participating at any time without explanation or penalty. I understand that the tapes and transcripts resulting from this oral history may be subject to the Freedom of Information Act, and therefore, may be releasable to the public contrary to my wishes. I further understand that, within the limits of the law, the U.S. Army will attempt to honor the restrictions I have requested to be placed on these materials.

| | | |
|-----------------------------------|---|-------------|
| MAJ MARK POPOV |  | 20 MAY 12 |
| Name of Interviewee | Signature | Date |
| MAJ DOUG BAKER |  | 20 MAR 2012 |
| Accepted on Behalf of the Army by | | Date |

You have the right to choose whether or not you will participate in this oral history interview, and once you begin you may cease participating at any time without penalty. The anticipated risk to you in participating is negligible and no direct personal benefit has been offered for your participation. If you have questions about this research study, please contact the student at: maidoug.baker@usacac.army.mil or Dr. Robert F. Baumann, Director of Graduate Degree Programs, at (913) 684-2742.

To: Director, Graduate Degree Programs
Room 4508, Lewis & Clark Center
U.S. Army Command and General Staff College

1. I, LTC JOHN PAGANINI _____, participated in an oral history interview conducted by MAJ DOUG BAKER _____, a graduate student in the Master of Military Art and Science Degree Program, on the following date [s] 1 MAY 2012, concerning the following topic: *THE RELEVANCE OF ARMOR IN COUNTERINSURGENCY OPERATIONS*

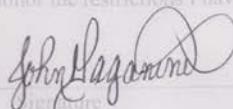
2. I understand that the recording [s] and any transcript resulting from this oral history will belong to the U.S. Government to be used in any manner deemed in the best interests of the Command and General Staff College or the U.S. Army, in accordance with guidelines posted by the Director, Graduate Degree Programs and the Center for Military History. I also understand that subject to security classification restrictions I will be provided with a copy of the recording for my professional records. In addition, prior to the publication of any complete edited transcript of this oral history, I will be afforded an opportunity to verify its accuracy.

3. I hereby expressly and voluntarily relinquish all rights and interests in the recording [s] with the following caveat:

None Other: _____

I understand that my participation in this oral history interview is voluntary and I may stop participating at any time without explanation or penalty. I understand that the tapes and transcripts resulting from this oral history may be subject to the Freedom of Information Act, and therefore, may be releasable to the public contrary to my wishes. I further understand that, within the limits of the law, the U.S. Army will attempt to honor the restrictions I have requested to be placed on these materials.

LTC JOHN PAGANINI
Name of Interviewee


Signature

21 MAY 2012
Date

MAJ DOUG BAKER
Accepted on Behalf of the Army by


Signature

1 MAY 2012
Date

You have the right to choose whether or not you will participate in this oral history interview, and once you begin you may cease participating at any time without penalty. The anticipated risk to you in participating is negligible and no direct personal benefit has been offered for your participation. If you have questions about this research study, please contact the student at: douga@lewisclark.edu or Dr. Robert F. Baumann, Director of Graduate Degree Programs, at (913) 684-2742.

To: Director, Graduate Degree Programs
Room 4508, Lewis & Clark Center
U.S. Army Command and General Staff College

1. I, MAJ ROBERT MCKENZIE, participated in an oral history interview conducted by MAJ DOUG BAKER, a graduate student in the Master of Military Art and Science Degree Program, on the following date 20 MAR 2012 concerning the following topic: THE RELEVANCE OF ARMOR IN COUNTERINSURGENCY OPERATIONS.

2. I understand that the recording [s] and any transcript resulting from this oral history will belong to the U.S. Government to be used in any manner deemed in the best interests of the Command and General Staff College or the U.S. Army, in accordance with guidelines posted by the Director, Graduate Degree Programs and the Center for Military History. I also understand that subject to security classification restrictions I will be provided with a copy of the recording for my professional records. In addition, prior to the publication of any complete edited transcript of this oral history, I will be afforded an opportunity to verify its accuracy.

3. I hereby expressly and voluntarily relinquish all rights and interests in the recording [s] with the following caveat:

None Other: _____

I understand that my participation in this oral history interview is voluntary and I may stop participating at any time without explanation or penalty. I understand that the tapes and transcripts resulting from this oral history may be subject to the Freedom of Information Act, and therefore, may be releasable to the public contrary to my wishes. I further understand that, within the limits of the law, the U.S. Army will attempt to honor the restrictions I have requested to be placed on these materials.

MAJ ROBERT MCKENZIE
Name of Interviewee



23/5/12
Date

MAJ DOUG BAKER
Accepted on Behalf of the Army by



20 MAR 2012
Date

APPENDIX B

INTERVIEWS

Interview: MAJ Mark Povov

Thank you in advance for taking the time to answer the following questions. Having operated in Kandahar I realize the value of maintaining an armored force to bring the fight to the enemy. Please answer what you can and keep it in the unclassified area. Cheers! Doug.

Your Current Name Rank and Position (so I can accurately cite you).

Major Mark N Popov, G3 2 Canadian Mechanized Brigade Group.

When and to what location were you deployed?

June 1998–February 1999 – Una-Sana Canton (including Bihać, Serb Krajina, Zgon), Bosnia-Herzegovina (Liaison Officer, Armoured Car Squadron); January–August 2005 – Kabul Province, Afghanistan (2IC/XO, Armoured Recce Squadron); October 2009–May 2010 – Dand and Panjwayi Districts, Kandahar Province, Afghanistan (Commander, Armoured Recce Squadron Combat Team).

What was your mission?

To secure the population of Southern Kandahar Province in order to set the conditions for governance, reconstruction and development to take hold.

What type of vehicles were you equipped with?

Coyote combat reconnaissance vehicle (LAV2/LAV 25 variant), LAV III (Stryker predecessor) and LORIT (LAV III Operational Requirements Implementation Team-upgraded LAV III) Infantry Fighting Vehicles, Bison (LAV 2, no turret) Command Post and Buffalo Armoured Recovery Vehicle (Bison variant for recovery purposes) Cougar MRAP, Upgraded M113 variants (Tracked Light Armoured Vehicle–TLAV and Mobile Tracked Vehicle Engineer-MTVE), RG-31 and from time to time, Leopard 1 MBT.

What preparation and training did you conduct prior to deploying? How did this training relate to the tactical situation and employment of armor in theater?

Attached PowerPoint will ID our training regime and achievables. In essence we conducted training from individual to collective (combat team size) in both warfighting (combat team in a Battle Group context) and in COIN operations. Our OCT while being validated at the Canadian Manoeuvre Training Centre were, for the most part, Afghan veterans who had been employed in Armoured roles in theatre, and a number of the

scenarios were armour specific, everything from convoy escorts to mounted Observation Posts to mechanized and tank offensive operations.

What was the threat environment in your AO?

The IED threat was very high and in some regions extreme, the direct fire threat, aside from harassing fire, was low. In the few exchanges of fire we were involved in, we won decisively using precision direct fires, quickly, before aircraft, artillery or other assets could be brought to bear. While we trained and were ready to use artillery to fix the enemy and manoeuvre and direct fires to strike, we never were presented the opportunity.

How did your armor perform against that threat?

Depending on vehicle type, extremely well. My squadron had 8 large IED strikes during the mission, of which 6 damaged vehicles severely enough they had to be recovered to KAF and left out of battle. While I had casualties, I had no amputations; my worst casualty was a soldier who broke his pelvis, several vertebrae and sustained internal injuries. He survived and returned to duty after a year of rehab.

Did you make any modifications to your vehicles to better accomplish your mission?

We made very few field modifications. Some crews placed extra sandbags on the floors of their vehicles, which we were told could actually increase injury, but it was a crew choice. Most vehicles had checklists taped up on most surfaces for best view (ie radio reports were taped on the inside of my EPK (Enhanced Protection Kit) turret armour shields for quick reference. In vehicles that were not equipped with electronic countermeasures (such as Coyote), personal manpack versions were strapped to the tops and used as an improvised countermeasure prior to proper vehicle-mounted ECM being installed in the latter part of the mission. Every crew had tow cables and slave cables (booster cables to start vehicles with dead batteries) stowed for ready use and all stowage was tightly strapped down in every vehicle or stowed outside to reduce the hazard of it injuring the crew in the event of an IED blast. All our modifications and crew SOP were oriented to defeating/mitigating an IED threat, not a direct fire one.

What was your overall assessment of armored operations in Afghanistan? What unique advantages or disadvantages did you experience with tanks in Afghanistan?

When a combined arms team assaults an objective and tanks are used to breach and get the infantry into the objective, no young infantry soldier wins the Cross of Valour for kicking in the door and leading the charge into a compound full of insurgents. On the other hand, more often than not, the same young infantry soldier will come back alive. I would hope that in every future conflict, to include stability operations, future coalitions will see tanks and medium armoured reconnaissance to be as critical as aviation when considering force structure. Nothing matches the mobility, flexibility, C2 capability, long-range, precision direct firepower, lethality with minimal collateral damage and

ability to shock, disorient, disrupt, pre-empt and dislocate enemies, even insurgents hiding amongst the population, as armoured forces. While they need to be used correctly, even in the complex maze-like terrain of grape fields and compounds in southern Kandahar province, armour was critical to saving soldier lives and defeating the enemy on a daily basis.

Interview: MAJ Robert McKenzie

Thank you in advance for taking the time to answer the following questions. Having operated in Kandahar I realize the value of maintaining an armored force to bring the fight to the enemy. Please answer what you can and keep it in the unclassified area. Cheers! Doug.

Your Current Name Rank and Position (so I can accurately cite you).

Major Robert McKenzie, Regimental Second in Command, Lord Strathcona's Horse (Royal Canadians).

When and to what location were you deployed?

I deployed from April to November 2010 as part of the First Battalion, The Royal Canadian Regiment Battle Group, into the Panjwa'i district WEST of Kandahar City. I also deployed as part of the Regional Command South Headquarters from Feb to Nov of 2006.

What was your mission?

Battle Group Mission: 1 RCR BG, in close partnership with 2/1/205, PANJWA'I District AUP, GIRoA and Coalition Partners, will SECURE the population of PANJWA'I in order to marginalize the insurgency and enable GIRoA, ISAF and Whole of Government initiatives to stabilize KANDAHAR PROVINCE.

Squadron Mission: A Sqn will DISRUPT INS movement and actions within its AO in order to SECURE the population and gain further LN support to GIRoA, ANSF, and CF.

Tasks:

DISRUPT INS within assigned AO through a constant overt presence

Provide Armour in support of other Cbt Tms and or BG operations

What type of vehicles were you equipped with?

Leo 2A6M 14

Leo 1C2 7

Leopard 2 ARV 2

Leopard 1ARV 1

Leopard AEV 3

(Belonged to Engr Sqn but always att. to us, equipped with fascines)

TLAV(Upgraded M113) 7

(Incl counter battery radar)

AHSVS (Armoured 10 ton truck) 5

(Fuel, rats, ammo)

What preparation and training did you conduct prior to deploying?, how did this training relate to the tactical situation and employment of armor in theater?

We conducted Sqn level training to bring us up to Troop level live fire by day and night

prior to joining the Battle Group in Fort Irwin for Combat Team live by day and night as well as Battle Group level dry. We conducted ops in all terrain, as well as urban Ops. The trg we conducted closely matched our employment in Theatre.

What was the threat environment in your AO?

We faced an evolving threat as the tour progressed. We arrived prior to the commencement of the fighting season, so the threat was predominantly IED focused. As the tour progressed, the enemy became more kinetic, with more frequent direct fire attacks. They focused their efforts on our lines of communication and sought to gain lodgment in small communities via intimidation and emplacement of IEDs.

How did your armor perform against that threat?

We never suffered any casualties as a result of IED strikes or direct fire. Two soldiers were wounded by shrapnel, one from an RPG and the other during a mortar attack. We had several IED initiations under the mine rollers, but no significant damage resulted. We had few instances where the enemy chose to stand and fight us; our arrival often caused them to depart the objective area. Our presence was normally the most effective weapon.

Did you make any modifications to your vehicles to better accomplish your mission?

We made no major modifications to the tanks. Our standard implement package of mine rollers, mine plows and dozer blades proved very effective, and we did several conventional breeches of legacy minefields as well as IED belts. The addition of a thermal cam package on the turrets and hulls helped facilitate maintenance and enabled the crews to move around and conduct maintenance without being burned. Part of the Cam package was an umbrella which shaded the Crew Comd and Loader's hatches. This proved invaluable and other arms tried to jury-rig variants of it for their own vehs. We also added an ECM package.

What was your overall assessment of armored operations in Afghanistan? What unique advantages or disadvantages did you experience with tanks in Afghanistan?

Overall, we provide many doctrinal armour effects, though not always in a doctrinal kinetic fashion. Our ability to conduct "break in" was used to advantage, the combination of roller tanks, the AEVs and dismounted engineers to prove ingress routes and choke points was exploited to full advantage. Deterrence was also a distinct advantage, as referred to earlier, our arrival often prompted the enemy to depart and the local civilian population would also understand that something significant was about to happen, which prompted them to either depart themselves or lead us to areas of concern. We were also useful as a feint, given the signature of an armoured column, we would draw attention from other activities. As has always been the case, our most unique advantage was our mobility. The corresponding disadvantage was that not all elements of a given Cbt Tm shared the same mobility, resulting in being forced into canalizing terrain and roads to

facilitate all elements. The issue of manoeuvre damage was also a concern, as the mission matured, so did the focus on minimizing damage. We made a concerted effort to remediate during all operations.

Interview: LTC John Paganini

Sir, thank you in advance for taking the time to answer the following questions. Please answer what you can and keep the information unclassified. Respectfully, MAJ Baker.

Q1: Your Current Name Rank and Position (so I can accurately cite you).

A1: LTC John M. Paganini, Director, COIN Center, Fort Leavenworth KS

Q2: During operations IVO fish mountain, what was your mission and purpose for the operations?

A2: There were two separate operations associated with Fish Mountain. The initial operation was to attack to seize terrain for the occupation of a Platoon Patrol base in the vicinity of Taliban controlled villages. FOM. The Second was to Disrupt Taliban forces in vicinity of villages situated on the north, north west side of Fish Mountain.

Q3: Did you request armor support or did higher offer them to assist the squadron?

A3: Yes, having been briefed on the capabilities of the Canadian Leopard tanks during the squadrons relief of the Canadian Battle Group in Dand district, I requested Armor support for the operation.

Q4: How did you envision employing them? Did they execute your intent IAW your visualization?

A4: . On the First operation the Tanks would establish positions on the north west egress routes from Fish Mountain, preventing insurgents from escaping the clearing force. On the second operation, the tanks would conduct a demonstration IVO of a village on the north side of the mountain. The village was a staging area for Taliban leadership, situated on the unit boundary between 1-71 CAV, 122 IN and the Canadian Battle Group. An extensive IED belt surrounded the village in which the mechanized force was prepared to breach. .

Q5: Were there any issues with the Ghost Soldiers having little or no prior experience working with tanks?

A5: Aside from the normal familiarity issues the Canadian and US Soldiers worked well together. The biggest issue was optics. The tanks, thermals and the cavalry's Infrared optics required adaptations in marking lanes, potential IEDs, or handing off targets. The dismounted cavalrymen utilized MRE heaters and hand warmers to mark targets for the tanks.

Q6: What combined training did you conduct prior to the operation?

A6: The Canadian Key Armor PLT leadership was flow to the Squadron HQ to participate in the combined arms rehearsal and rock drill.

Q7:What was the enemy threat in your A.O.?

A7:Mainly IEDs, The enemy, TTP was to engage forces with direct fire and withdraw IOT draw US forces into an IED ambush located in the uncultivated vineyards.

Q8:How did armor perform against that threat?

A8: Great, the armor platoon consisted of tanks, engineer assets, mechanized Infantry, and C2 vehicles. They were prepared to conduct breaching operations to penetrate the Taliban IED belt.

Q9: What are your impressions in regards to the capabilities or detractors that armor brought to your operation.

A9: I would have liked to have had more time for rehearsals but overall the armor provided me additional capabilities contributing to success in conducting the operation.

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